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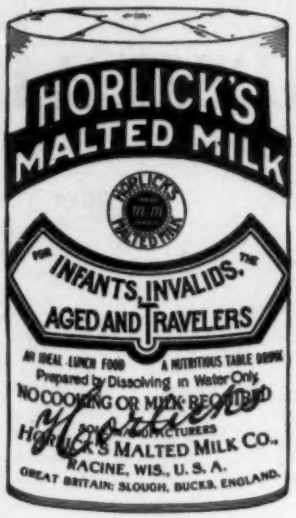

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VOL. XXX CHICAGO, ILL., NOVEMBER, 1916 No. 5

Original Articles

SOME FUNDAMENTAL CAUSES OF DISEASE,*

DEFECTIVE HUMAN PLUMBING.

WILLIAM SEAMAN BAINBRIDGE, M. D.,

NEW YORK CITY, N. Y.

The history of the search for the causes of disease is commensurate with the history of the human race. The savage of the primeval forest who sought to cure the aches and pains, agues and fevers, of his tribesmen with root and herb, tooth and toenail, no doubt had his own theories as to the cause or causes of the physical ailments which he endeavored to alleviate. The incantations of the "voodoo doctors" of all ages had their origin in a theory, however crude or vague, and as far afield of the origin of the disease which he sought to frighten away.

As civilization advanced, and the history of medicine began to assume a more authentic character than the previous word-of-mouth records, it became largely a chronicle of the long-continued struggle to discover *causes*. Man has always sought to know the *reason why*. When, therefore, a plausible explanation of all physical ills was proposed it was accepted without question and advocated until another more plausible theory was offered.

Thus during many centuries of the earliest period of recorded medical history one theory held sway for more than a thousand years. This was the so-called *"humoral"* or *bile* theory, often alluded to as the Galenic theory of disease. Every physical ailment was amenable to diagnosis in the minds of the early physicians, as to outcome of perversion of function of one or more of the four humors—blood, mucus, yellow bile and black bile—to which so much importance was attached by these observers. And so, during the periods made famous by Hippocrates, Celsus, Galen and their followers, who left their impress upon the primitive records of medicine, the world was content to accept this humoral theory of the cause of disease. So completely had this hypothesis been accepted that a profound sensation was created among those who gave thought to such matters when Paracelsus, the Bombast (so called because of his over-weaning self-satisfaction), presumed to cast doubt upon this time-honored explanation of the origin of disease.

Once doubt had been definitely entertained concerning the correctness of the theory, its overthrow was as swift and complete as its sway had been persistent and absolute. A hundred years after the views of Paracelsus had been promulgated scarcely an advocate of the humoral theory could be found.

The medical world, finding itself thus ruthlessly overcast by a sea of doubt, followed first one pilot and then another, in the search for an etiologic haven. The effort entailed by the search, however, was not without results, which came with relative rapidity.

The discovery of the circulation of the blood, the first great step in the progress toward the ultimate solution of physical ills, altered the older conceptions of anatomy and physiology, and placed the *normal* on such a clear eminence that departures into the realm of the *abnormal* were much more plainly notable than ever before. This was of vital importance in the search for the fundamental causes of disease.

The invention and perfection of the microscope, making possible, as it did, the discovery of the cellular character of the body, and revealing, as it likewise did, the hitherto invisible and unsuspected world of bacteriological life, opened new fields of investigation, one after the other, in rapid succession.

The blind acceptance of the four humors was soon replaced by a scientific understanding of the circulatory system and the "animalcules" to which Leeuwenhoek, the Dutch lens-grinder directed attention, were soon metamorphosed into the bacteriological flora which we now recognize as the fundamental cause of so many diseases.

*Abstract of a lecture, illustrated with many drawings of actual cases, presented at the meeting of the Illinois State Medical Society at Starved Rock, Ill., July 12, 1916.

The germ theory now became the measuring rod, so to speak, by which all, or certainly the larger proportion of diseases, came to be studied. No matter what the symptoms, the effort was made to reduce the cause to terms of germs. One by one the enigmas of the past have yielded to the searchlight of scientific investigation, and the offending bacterium or other parasite, cell or worm or what-not, has been discovered, Bertilloned, as it were, and properly catalogued. Some diseases, notably cancer and infantile paralysis, are still mysterious so far as the fundamental cause is concerned. Other diseases, it is fair to assume, may never be associated with a specific organism as the essential cause. Notable among these are certain disorders of the glands and organs of internal secretion, giving rise to such affections as the different forms of goiter, and to certain abnormalities of mind and morals.

Just what part, if any, germs or other parasites may play in augmenting such affections as have not been definitely traced to a specific origin, cannot be stated at the present time. Study along this line, however, has directed attention more and more to the body cells themselves, as well as to the foreign cells or germs which destroy or vitiate the function of the individual body cells, or groups thereof which we know as organs or tissues, and finally of the body as a whole.

Following this line of investigation two factors have been brought prominently into the foreground (and of these I wish to speak particularly on this occasion): first, *internal secretions*—the so-called *hormones*, which regulate and bring into harmonious action the various functions of the tissues in the interests of physiological life; second, the *pars résistance* of the tissues themselves.

The power of the cells which compose the body to do their work is commensurate with their nutrition and vitality. The resistance of the tissues to the introduction of disease or disturbed function is dependent in very large measure upon the condition of the cells which constitute them. This tissue resistance lies back of, and favors or hinders, the internal secretions in their work of regulating function.

It will be seen, therefore, that these two questions play a most important rôle in the study of pathological conditions which we call disease, their prevention and their treatment.

Recognizing, therefore, the importance of cellular vitality, the trend of modern research along preventive lines is directed not only against the causative germ, when one is known or suspected to be the provocative agent, but against the products of such organisms, the toxins or poisons which are liberated in the tissues as a result of the activity of these invaders.

This warfare of prevention by elimination is directed not only against the bacterial toxins, but against the tissue toxins as well. The work of Carrel, of the Rockefeller Institute, has shown that tissues may continue to live almost indefinitely, *provided the toxins of the tissues themselves, the products of the activity of the individual cells, be removed.* Thus, when Carrel returns from France and his war activities, he will probably find tissues removed from the body of which they formed a part, and which he left to the care of his assistants when he sailed away, still alive and healthy. Failure to keep such tissues clean, to eliminate the possibility of self-poisoning, would quickly result in their death and decay.

It would seem, therefore, that if a spring of eternal youth or a fountain of everlasting physical life is ever in a measure to be discovered it must provide for the purification of the individual cells, and thus of the body as a whole. For it is essential to health, and even to life, that we get rid not only of the poisons which may be absorbed from without, but we must also rid ourselves of the poisons produced in the very living and being of the cells which constitute our bodies.

In other words, we must help Nature, wherever she needs help, in the elimination of the products of metabolic activity. There is, as I have suggested, abundant evidence to prove that faulty elimination of the products of physiological activity is a fundamental factor in the production of such states of being as facilitate the taking on of disease, if, indeed, it is not itself the essential cause of certain diseases.

In short, the matter resolves itself into a question of body plumbing and sanitation. Our physical house, the body, as well as the temporal house in which the body dwells, must have a proper plumbing system, in order that each individual cell may be kept free from the stagna-

tion and accumulation of the poisons taken into or engendered within the organism.

In this connection there must come to mind the allegorical presentation of defective drainage familiar to those who have seen the play, "The Servant in the House." It will be remembered that the town in the play was beautiful, business was good, the inhabitants were prosperous and seemingly healthy. Outwardly the community was in a most satisfactory condition, but something was essentially wrong. The moral state of this delightful little town was unsatisfactory. In order to overcome this unfortunate moral and spiritual unhealthiness the select men of the town decided to build a fine cathedral in the hope of improving the tone of the community. The great church was built, the bells rang out on Sunday, and the inhabitants flocked to the service. The choir was good, the music was beautiful, and the services were conducted after the manner of the best cathedrals. Apparently all was well. Presently, however, the congregation began to complain of headaches; those who were most persistent and assiduous in their attendance having the severest headaches. The choir was changed; the minister was changed; every effort was put forth not only to render the service attractive, but to prevent the troublesome headaches, which were the invariable accompaniment of attendance upon the services. All these efforts, however, were in vain. The elders finally met in solemn conclave to decide what further steps to take to rectify the trouble. After a good deal of futile conversation, one man suggested that a friend of his should look into the matter. The friend, who was only a drain man, with no education, no gift of speech, and dressed in overalls when he was brought in, happened to know, as he told them, what was the matter with their cathedral. It was a defective drain right under the altar!

As with the cathedral, so with the body—defective drainage is the hidden cause of many ills.

The builders of cathedrals have long recognized the fact that beauties of architecture count for nothing if ventilation and drainage are imperfect. The trend of the times in the matter of house building, whether it be cathedral or skyscraper, palace or bungalow, has been steadily toward improvement in every detail of sanitation. Fortunately for the occupants, the architect is able to forestall the headaches of the allegory, and the many other physical ills which might result from faulty construction, because he has mastered the principles of sanitary house building, and is able to express his knowledge in brick and mortar. And if perchance, through wear and tear, or unavoidable accident, the plumbing system of a house is rendered inefficient, the same knowledge is quickly brought to bear in the rectification of the trouble. The occupants, by the way, run no risks of sickness from this source, for defects are soon detected and the remedy applied.

Unfortunately, the bodily house is not so easily blueprinted as is the cathedral or the home. Each individual human house is more or less a law unto itself. It does not always come into being in the perfect condition that the house of brick and mortar assumes when the builder has finished his work. And even when the human tenement is initially fit, external and extraneous circumstances all too often combine to render it unfit.

Thus in infancy we find the central drainage system of the bodily house—the alimentary canal—thrown more or less completely out of commission through improper feeding. The "colic" and all the other "upsets" to which the infant, improperly cared for, is prone, often express themselves in later childhood in bad teeth, in defective physical or mental development, or in one or another of the definite diseases.

The drainage system thus early impaired, if left in this defective state, may grow progressively less and less efficient as age advances. A defect which should never have been allowed to exist, and which could have been corrected by very conservative measures if promptly recognized in its beginning, is thus allowed to reach a stage in which to rectify the damage and to prevent further trouble, requires the most radical measures.

There is laid the foundation, then, within this imperfect drainage system, of a state of affairs which may prove to be a fundamental factor in the production of other and more far-reaching abnormal conditions. Vicious circles of action and counteraction are thus set going, the progress and the ultimate outcome of which it is difficult and sometimes impossible to determine.

When, for example, the teeth—the outposts which should guard the great drainage canal of the body—are defective, and the mouth unclean, as it must be when defective teeth are present,

the entire alimentary tract suffers. Digestion is upset, constipation results, or perhaps chronic intestinal stasis ensues.

The first and most obvious preventive measure then is to rectify all defects in the teeth as promptly as possible. Bad teeth act injuriously on the stomach and intestines and these in turn react on the teeth. Moreover, if the teeth are not sound, food cannot be properly masticated and must be imperfectly assimilated. The first step, therefore, and a very important one, in the sanitation of the human body is to put the teeth in a sound state, and the gums and mouth in a clean condition, and to keep them so.

In searching for fundamental causes of disease, however, one must guard against a too close focalization of attention upon one or another source of functional error. While the teeth undoubtedly set going many abnormal processes in the alimentary canal, other possibilities are to be borne in mind. For, according to latter-day investigations, the intestines themselves, through the tiny glandular structures within their walls, are supposed to furnish their own regulators or hormones in the way of one or more internal secretions. It is supposed by some observers, for example, that chronic intestinal stasis—the sluggish, lagging onflow of the contents of the great drainage canal of the body—is caused, in part at least, by perverted function of these intestinal regulators. Here, then, we seem to find another fundamental factor in the production of disease.

It is only within comparatively recent years that our knowledge of the function of the ductless glands and their internal secretions has assumed anything like exactitude. It was not until Brown-Sequard, experimenting with testicular extracts, which he administered to himself and some of his co-workers, gave the cue that the theory of the existence and function of the internal secretions was put to the test of practical application. By the administration of the extracts of certain glands, it was found that the function of the corresponding glands in the individual to whom the extract was given was stimulated to greater or to more nearly normal action. From these experiments has been evolved one of the most promising theories as to the fundamental cause of an important class of maladies, to which I have already directed brief attention.

So important is the rôle attributed to the internal secretions in the normal exercise of body functions, that some observers have gone so far as to hold that so long as these secretions are generated properly and exercise their regulatory function in normal fashion, all is well with the physical health. When, however, through the abnormal conditions that arise in consequence of defective drainage throughout the body, or as the result of other conditions not determined, the internal secretions are in any way interfered with, the machinery of the body is more or less vitally hindered.

It may be that the evil influences, whatever they are, that interfere with the output of these secretions are conducive to too great a flow of these mysterious fluids; if so, then we have a hyper-activity of certain functions over which the given gland of internal secretion is supposed to exercise its regulatory function. An illustration of the outcome of this state of affairs is seen in exophthalmic goiter, or Graves' disease—systemic goiter, as I prefer to call it—with the bulging eyes, in some cases the enlarged thyroid gland in the neck, the rapid heart beat, the shortness of breath, and the general distressing symptom-complex of this affection.

On the other hand, if too little of the secretion of the thyroid gland is the result of the interference with its function, we have a hypo-activity of certain process, leading to many distressing physical and mental abnormalities, such as excessive fat, congenital idiocy or cretinism, and a number of unfortunate and previously unexplained below-par conditions.

Illustrations of many of these conditions were presented in connection with the Oration on Surgery, which I had the pleasure of delivering before the annual meeting of the Maine State Medical Society, at Poland Springs, Me., on June 9, 1915, report of which was published in the *Maine Medical Journal*, August, 1915.

Just what part the internal secretions play in the production of chronic intestinal stasis, as I have said, has not been determined, but it is fairly certain that another vicious circle is here set in motion. For intestinal stasis, however inaugurated, seems to be, in itself, a fundamental factor in the production of certain diseases.

This condition, to which Sir Arbuthnot Lane, the great surgeon of London, has applied the term "Chronic Intestinal Stasis," is a persistent reten-

tion or retardation of the contents in some part of the intestinal canal, which occurs at certain points of predilection, one of these being in the appendix region. This is not the commonly known condition of sluggishness in the lower bowel designated as constipation, for stasis is often accompanied with the opposite of constipation, namely, diarrhea.

When chronic intestinal stasis occurs, intestinal putrefaction ensues, autointoxication follows, and in the wake of these comes a long train of physical and mental ills, too lengthy to be recounted here. The immediate symptoms, quite naturally, vary with the duration and the intensity of the stasis. Common among them are headache, general malaise, localized pain and tenderness in the abdomen, backache, drowsiness, inability to fix the attention, brown staining of the skin, a lumpy condition of the breasts in females, melancholia, and so on, leading up to absolute mental and physical disability.

According to Lane, this stasis is a fundamental factor in the causation of many diseases.

And so we have here a sort of house-that-Jack-built state of affairs, one ailment growing out of another, this in turn, giving rise to another, and so on, until we get back, no matter which way we turn, to the foundation of all—*defective bodily drainage*, with the alimentary tract playing the role of main conduit.

When intestinal stasis is present, with its concomitants, intestinal putrefaction and autointoxication, it is plain that the drainage canal is not being thoroughly cleared of its contents; that efficient plumbing is called for, and that Nature, the greatest of all plumbers, must be assisted, or the results of interference with her work overcome by whatever radical plumbing measures may be indicated.

Sometimes,—in fact, in the vast majority of cases,—it is possible to reinaugurate normal drainage by dietetic, hygienic, and medicinal measures. When the intestinal stasis is of mild degree and of short duration, it is quite possible to overcome it entirely by such conservative means. It is not, therefore, always to be considered as coming within the category of a surgical affection, to be treated only by operative interference. If, however, through neglect or improper treatment, the individual case is no longer amenable to preventive measures, or to the milder methods of treatment which come within the province of the family physician or the specialist in diseases of the alimentary tract, then the surgeon must be consulted. In many instances conservative surgical procedures will answer. These may consist of cutting bands which have formed about certain portions of the intestine, causing kinks in its walls, and obstruction to the flow of its contents. Sometimes the appendix, through inflammation or other causes, may "hitch up" a contiguous loop of the intestine in such way that it does not drain properly, thus leading to a condition of stasis in this part of the drainage system. Removal of the appendix and straightening out the canal in such cases may restore proper drainage. And so, according to the condition found on opening the abdomen, milder surgical measures may overcome all the difficulty.

Unfortunately, however, some cases have advanced too far for such conservative treatment before relief is definitely sought. In such cases it may be necessary to resort to the more radical procedures for overcoming the long-continued interference with drainage and the resulting pronounced and persistent intestinal stasis. Here it may be necessary to "short-circuit" the drainage system, by what is known as ileocolostomy—the joining of one portion of the canal to another in such way as to give a "short cut" to the onflow of the contents of the bowel. In other cases it is necessary to remove a part of the large bowel by the operation known as colectomy.

The sequence of therapeutic intervention to be borne in mind, then, in connection with chronic intestinal stasis, is: 1. Prevention; 2. Medical, dietetic and hygienic treatment; 3. Conservative surgery; 4. Radical surgery; 5. Post-operative care to prevent recurrence.

The important lesson to impress by what I have said and by the pictures presented is that the bodily mansion requires and deserves at least as careful attention to its sanitary plant as does its temporal dwelling place. Some of the enigmas of disease are being cleared away by the discovery of the fundamental causes thereof; others remain as yet unsolved. The solution of many of these depend in a large measure upon continued effort along the lines which I have endeavored to follow on this occasion.

DISCUSSION.

Dr. E. P. Sloan, Bloomington, Illinois: I think we are very fortunate indeed to have Dr. Bainbridge with

us as the invited guest of the day and to have the opportunity of hearing him. He is certainly the greatest man in America on intestinal stasis. He is to this country what Lane is to England. I think his work more practical than Lane's. He has a method that is, so far as I know, original in dealing with the colon, that saves the colon in a large number of the cases on which Lane does colectomies or short circuits. Dr. Bainbridge does colectomies and makes short circuits, but in the great majority of his cases he absolutely relieves without it. He reserves colectomy for the most advanced cases. Some seem to think that all the operative treatment of intestinal stasis amounts to is separation of adhesions; others say "Same as Enteroptosis." Now the fluoroscope and other methods of examination show us many patients with extreme enteroptosis and no intestinal stasis. Some have had gastro-enterostomies, appendectomies, "Lane's Kinks" fixed and Jackson's veils removed, kidneys anchored, adhesions separated and still have intestinal stasis. Some have no symptoms of abdominal trouble but have symptoms of many diseases, not usually related to abdominal trouble. Many such pitiful patients are called hysterics and are not given relief or sympathy as they deserve. The varied manifestations of similar conditions and the varied symptom picture of the same conditions—usually obscured and changed by previous operations and numerous previous treatments—make correct diagnosis and correct treatment a most difficult undertaking. Every case is different from all others, if not in the pathological conditions present, yet different in the symptom picture.

All of us who have been doing abdominal surgery for several years have had some patients who come back, go to others, have various operations and yet are no better. These are the ones that intestinal stasis treatment is relieving. The operation for intestinal stasis includes ascertaining that the rectum and sigmoid are free and patulous—the colon free from kinks and obstructions—if dilated and the sacculations stretched until they are in fact diverticuli, then the colon must be repaired by the Bainbridge method, short circuited or a colectomy done. If the head of the cecum is dilated until it is a pouch it must be repaired, and if rotating around the mesentery it must be anchored. If the ileocecal valve is incompetent it must be repaired, Lane's kinks released, duodenojejunal kinks released; gastro-enterostomy performed if indicated, gall bladder adhesions to duodenum near pylorus must be especially looked after. Then the patient is put in reverse Trendelenburg position and something else may show up at the final inspection that is blocking the intestinal canal.

After seeing some of this work one is impressed with the fact that fixing all but one of the traps, as a plumber would call them, will not suffice. To cure these patients one must remove every obstruction and repair every break in the muscular coat of the bowel.

With experience comes the conclusion that intestinal stasis work is the most difficult, but the most interesting and most satisfactory of any abdominal work of today. To appreciate fully this work you must see a master like Dr. Bainbridge do it. No one can give you a correct idea of it by description.

INDIVIDUATION IN THE STUDY OF MENTAL DISORDERS.*

FRANK P. NORBURY, A. M., M. D.,
JACKSONVILLE, ILL.
Medical Director of the Norbury Sanatorium, Jacksonville, Ill.

In approaching the study of the individuation of patients in the clinical interpretation of mental disorders, we must, first of all, be practical. At least, this application must be made in the sense of giving intelligent consideration to all factors which enter into the problem of the individual. This practical need is to me paramount, even after we have followed a distinct systematical study of the factors, which give us insight concerning the clinical classification of the case under consideration.

We seek all of the determining factors. For this reason, we follow the case method because of its wide application in considering: first, the symptom-complex, upon which we base the clinical classification; second, the life situation, wherein we consider in an intelligent and sympathetic manner all of the social factors, especially environment with its very varied influences, which directly or indirectly, have a bearing upon the case; third and last, but not least, the study of the personality of the patient which is the clue to temperament, character, etc., the weight of which must concern us in the last analysis of our problem.

It is evident, therefore, to be useful, to be practical, to be scientific in the study of the individual and to have a real creative interest in his welfare, there must be training and accumulated experience as the basic factors in becoming practitioners in mental medicine.

It is further evident that preceding observation, clinical study and practice, there must be adequate training in psychology (the science of mind), especially in genetic psychology, social psychology and in psycho-biology.

To give greater values to individuation in a clinical case method of study, let me recommend social service training in order that environment may be fully understood by the would-be psy-

*Read before the Madison County Medical Society at Alton, Ill., July 7, 1916.

chiatrist. My own experience of twenty-eight years in this field of clinical medicine has taught me that without these fundaments in the biological and sociological factors, we cannot acquire the art of psychiatry; and in consequence, we will fail to give the individual patient the clinical consideration which is due him. Experience, in its accumulation based on systematic study of the foregoing essentials, in the analysis of cases, becomes a great asset in our understanding of the individual problems presented in each case. Further, experience stimulates observation upon which clinical interpretation is founded and which in turn suggests treatment.

It is true that the ordinary routine of case study as followed in the reception service in hospitals for mental disorders, supplies much of the observational data needed in clinical classification. But, we need more than ordinary observation in formulating an adequate and satisfying clinical picture of a case. We need investigation, which really is research, and means more than systematically following a scheme, however complete it may be in its details. Investigation goes even further; it enters into a study which depends upon the ingenuity, resourcefulness and personality of the clinician.

Here is where educational opportunities, preliminiary training and experience give their true values in making a clinician in mental medicine. The day of the amateur psychiatrist is passing and the trained clinician is coming into his own. The time is not far distant in the State Hospitals service in this country, just as in the special medical service rendered by the U. S. Army, Navy and Public Health Service, when insistence upon adequate preparation, training and experience must be the criteria for service in this now recognized special department of medical service.

In other special fields in the art of medicine, notably in surgery and in internal medicine; it is the unique distinction of having complied with the three essentials, viz: adequate preparation, training and experience, that one has authority for being recognized as specialists in these fields of practice. If such requirements exist for these special clinical fields, why not for psychiatry, *which involves more general knowledge of the individual than any other specialty in the science and art of medicine?*

In the study of the individual, we deal with the most profound problems in philosophy and in medicine. For these reasons, it is demanded of the clinical psychiatrist, that he have more comprehensive, practical knowledge of the individual than is demanded of any other specialty in medicine. The individual is a problem in normal psychological interpretation. To determine his mental content means penetration by indirect means and the application of the evolutionary principle to all of the problems in order to get what Stanley Hall calls "a complete natural history of the mind."

Practical experience impresses one with the great biological facts of variability and their application in the study of racial variations in characteristics and traits and of social and ethical values. Also, a host of interrelated elements which can be described and judged as factors in the make-up of the life history of the individual. It is these factors, after all, which are the potentials that determine conduct and give the trade-mark which we designate personality. These forces spring from native instincts and emotions which are without the control of the individual; others from concrete events in experience representative of the fulfillments of his own volitions. Here is where interpretation from the viewpoints of both analytic and synthetic considerations come in to enable us to have real insight into the meaning of individuality. Without such understanding of the individual, we cannot give full interpretations of him as a problem.

Then, we must remember that body and mind in their integrations have manifold differences; "that the mind, like the body, seems to be made up of parts that can vary independently of each other." Crile has shown us in his remarkable book, "Man, an Adaptive Mechanism," that man is essentially an energy-transforming mechanism obeying law of Physics as do other mechanisms. In no other field of observation than that of mental medicine do we have a greater opportunity to view man as an adaptive mechanism; and, in this viewing, note analytically how also individuals differ. Again, when considered synthetically with reference to their personality as a whole, individuals show distinct differences in their social adaptations toward their fellows and to values and efficiencies which mark them as citizens.

Here is where I wish to emphasize the clinical significance of individuality. It must not be considered superficially as is too frequently the case. No! it is a complex problem involving variations in biological, social and ethical values. As a biological problem in heredity, we have valuable interpretative knowledge in our modern methods of study in genetics. The long "double line of forebears," with their mixture of variables, even if complex may, in many cases, be worked out by an understanding of Mendelian methods and interpretations. Bateson in his most enlightening work on "Problems of Genetics" says of Mendel's work that "Investigations which before had only been imagined as desirable now became easy to pursue and questions as to the genetic inter-relations and compositions of varieties can now be definitely answered."

Briefly put, the essence of Mendelism lies in the discovery of the existence of unit characters or factors. The application of Mendelism to the human race and its great problems in variability and adaptation is yet in a rudimentary form. But, this is also true of the genetic study of animals and plant life. In due time, however, speculative position regarding many of our genetic problems concerning man as an individual will be supplanted by real scientific opinion.

Permanent scientific progress in genetics is better established now than it ever was. It is our duty as physicians dealing directly with these problems in our daily clinical experience, to give heed to this advancement in scientific interpretation. Especially must this be kept in mind, in a genetic sense, when considering the fact that "the human being having both greater complexity of structure than other species, greater plasticity and a longer period of infancy" is moulded by environment more severely. Thus, from birth, during the plastic period of childhood and youth is the individual exposed to complex conditions of living, which moulds him into the most puzzling of living creatures. Thus is created individuality and thus are evolved the foundations for problems as we find them in our patients.

We begin our clinical work by description, which always must precede practical classification. We can classify clinically, differentiate subdivisions and arrange groups. But, it requires intensified study from the standpoint of all of the sciences, the findings in which are necessary to an understanding of the biologic and social values which enter into the making of what we call human nature. Clinical psychiatry is but an interpretation of these factors when disordered. The new psychiatry has opened this field and its strong currents have, in recent years, turned in the direction of psycho-analysis, as applied to the variational or the individual problem. This includes psychology—general—with its variational method of study of individual differences. This method is that of comparative observations, not only of species and racial factors, but of human differences in traits, and particularly the psychology of social differences and relationships, "where endowment, motive and circumstances meet," to give ethical values, group and economic values; above all, to give interpretation of facts as based on genetic and social psychology wherein the reactions of the primary instincts and their accompanying emotions are to be understood and valued "the emotional as well as the intellectual, the esthetic as well as the moral, the occupational as well as the relational impulses and expressions of men, as recognized parts of the psychological endowment—as integral parts of human nature." From such a study are evolved groups which are interpreted in accordance with the laws of evolution, especially in its application toward variability.

Each case, as I view the subject of individuation, therefore, must be considered from the standpoint of the clinical findings as based on modern diagnostic methods, including chemical, physiological and serological, etc., methods of procedure. Then, diagnostic psychological methods as applied to the mental life with as complete schematic data as possible. This data is greatly enhanced in value if we can have the facts of genetic psychological observations covering the periods of infancy and childhood, especially the pre-school age period when environment is fast moulding traits and indelibly stamping upon native tempermental tendencies the fundaments of character and personality. Again, let us follow the projected period of childhood during its nascent period up to twelve years when boy and girl are much alike; and then, on into that most interesting evolutionary upheaval caused by sex differentiation, the adolescent period.

We now have laid the foundation for the descriptive science of individuality. A science which cannot be confined within the limitations of psychology. True, we know that the study of

individuality is more closely related to psychology than any other science. But, we seek to go further and enter upon differential psychological grounds and this takes us into the realms of comparative differences. Kraeplin has immortalized himself in delineating differential studies of various traits in normal individuals and comparing these same traits as found in disorder or disease. This is the projected differential study of individuality and is aptly illustrated in the study of fatigue. Kraeplin has studied individual differences and delineated them in a curve, wherein the various factors in fatigue, each in itself independently variable have been isolated and established in a comparative way with the normal. In this way, norms have been established for some of the common mental processes, such as counting, searching for certain letters and incorrect spelling, addition of a column of figures, reading aloud, etc. Other investigators have followed individual psychological methods in their studies of differences. Experimental psychology has added interest and value to these differences, notably the work of Binet, Witmer, Healy, Goddard, Whipple, Thorndike, Seashore and others. Upon such studies was founded the now well known Binet scale, where variability is noticed in traits that most characterize a person in actual life.

Then, there comes in the widening scope of individuation in the psychology of Freud, which has given us a better understanding of the whole conduct of human life and a new comprehension of individuality, in that it explains those things which were formerly unexplained and has shown us that each individual is to a large extent the determiner of his own destiny.

Let me add in passing that the great philosophical French poet, Maeterlinck, has presented this same fact in his own unique way in his beautiful essay on "Wisdom and Destiny." He is an interpreter of life, a harbinger of hope, a prophet in happiness and gives to the individual his due as he seeks to aid him to work out his own destiny. This is projected differential psychology, the science of individuation. Freud, Jung and others have given us an understanding of the science of individual psychology, a differential psychology, with its basic inherent influences and motives, which, at work, create inhibitions, restrictions and repressions, etc., in such a way as to interfere with the full development of personality. Individual psychology here, in its application, is "destined to help individuals attain to that level where they really belong and to prepare people to better understand and meet life whether they are neurotic sufferers or so-called normal people with the difficulties and peculiarities which belong to all."

Freudian psychology is individual; it is analytical and it attempts to unify and value all of the various phenomena of man which has been observed and noted at different times by isolated investigators of isolated manifestations and thus being some orderly sequence into the whole. "It offers a method whereby the relations of the human being biologically, to all other living forms can be established, the actual achievements of man himself adequately valued and opens a vista of the possibilities of improvement in health, happiness and accomplishment for the human being." (Hinkle.)

What more can we ask of individual differential psychology? Freudian psychology leads to a study of the emotional life with its mechanisms, complex as they are. It leads to a study of innate differences in adaptability of an individual to the tasks of life and the reactions selective, perhaps, to environment. It leads to an understanding of circumstances as well as environment. It enables us to note the innate differences in individuals and their variations in adaptability to experience, tasks and environment.

We must not forget that deep-seated native tendencies act selectively upon the environment, and environment in turn reacts upon the individual to mould and modify the original native differences. In other words, the fundamental traits of interest evolved by experience determine conduct. Here is where marked interests, ordinary or extraordinary, instinctively create reactions, more or less fertile in developing attitudes toward life. This is especially true in the interest of sex, where its developing potentials project themselves in the evolution of personality. This question is paramount in the individual study of the adolescent and obviously its central importance must be recognized in order to unfold the aberrations, maladjustments and episodic eccentricities of conduct, that usually remain unexplained or are falsely attributed to other causes. Healy has given us valuable clinical evidence of the importance of this phase in human conduct, of this peculiar interest, in explaining the conduct of adolescents, even in well regulated fami-

lies where criminal charges have been preferred. His studies of "The Delinquent Individual" are rich store-houses of facts elucidating the psychopathology of youth. There are other fundamental interests based on the instincts and primary emotions which, to be best understood, it is necessary to study the mechanisms of the emotions, etc., as delineated by Cannon, Crile, McDougal and others. We, then, will understand their clinical significance, and their social values, especially from the standpoint of racial, family and individual survival needs.

The instinct of self-preservation with its accompanying primary emotion of fear; the instinct known as family instinct, which includes sex, as manifested both in the male and female in an individual manner with the accompanying primary emotion of love and its radiations; the gregarious instinct, the conscious of kind (the herd instinct) and its emotions; the acquisitive instinct with its considerations of rights, property in general and other inter-related primary instincts which serve in developing the considerations of morals, religious sympathy, etc., all of which in their correlations serve to mould the individual, give him character and define his personality. These preferential instincts and their correlations have deep psychological values in the analysis of a caes. Especially is this true in the relations of development, important in character and tempermental evolution where traits, characteristics, mark the individual as different from his kind. These inequalities, native and acquired, show their effects in accelerations or retardations and are departures from the average in development. They may be remedied by re-education of the personality, or they may be evidences of abnormality, which may increase with age.

The complexity of the individual we thus see, becomes a reality, wherein the purposive life, in its sum of interests, needs eternal vigilance, prompted by intelligent appreciation and sympathy to bring into proper balance these maladjustments. The complexity of our problems, therapeutically speaking, becomes more evident when we realize "that the development of interests is no mere unfolding of instincts"; for at the very beginning of life an intricate process of interaction commences between these innate instinctive elements on the one hand, and on the other, environmental forces, themselves highly complex, variable to a great degree and more so as socializing influences advance.

Interests are selective, and under average normal conditions the interesting forces of temperament and environment come to balance, and finally, the differentiation is made, which marks the individual as a personality, whom we recognize in the woof and warp of society. We cannot enter here upon the individual traits, nor the study of temperment or character. However, it is important to briefly touch upon some of the biological facts which have a marked bearing in differential study and in determining temperment, traits and character in its evolution. Of these, the most important are those of sex differentiation between man and woman, from the viewpoint of attributes, peculiar to each sex and upon which conduct may depend. Bell, in his valuable studies of sex from the standpoint of the endocrine glands (the internal secretions) has given us one of the most enlightening contributions of recent years. His studies of the correlation of the internal secretions in their specialized functions will do much to clear up the differential understanding of many of our complicated clinical problems. He has given us insight concerning the functioning of endocritic glands and their influence on general metabolism, "which is influenced to subserve the necessities of special functions and on the psychology of the individual." The value of this most modern field of research is to be had in an understanding of the fact that mind is influenced by metabolism and therefore, by the condition of the organs of internal secretion. This fact, we have known, but the value is in the breaking of new grounds, where are found the details of the intricate mechanisms of the mind, dependent upon the internal secretions and which go to mark individuation. "Mental aspirations are the aspirations of the controlling factors of evolution, even though they appear to be selfish ambitions of the individual." "Nature adroitly furthers her scheme of evolution by teaching man, before whom, but unknown to him, she places inducements to improve himself; and thus there are wheels within wheels, although the effect on the hand of Time alone is visible; reproduction with individuation; individuation with reproduction; Individuation; Evolution. The higher mental processes then in the human are turned into account in the physiology of reproduction in a manner apparently not exer-

cised in the lower order of creation." We must, therefore, remember that the individual is merely a tool of nature; a unit in a vast scheme. It is our work to understand the individual as we find him; to understand his mental attitude as dependent on general metabolism. This mental attitude is dependent on the metabolism of every cell in a man's body. Bell says, "that every cell of the body is an organ of internal secretion and is intimately connected with the life of all other cells." But those aggregations of secretory cells known as the endocritic glands afford us definite information as to the processes of metabolism with which they are connected; consequently we can trace their relations to mental processes. It is in this new field that a more exact study of the individual from the standpoint of metabolism is promising much in therapeutics. All of this extremely interesting and important modern research shows how mind is dependent for its normal functioning on the conditions of the body.

Contributory knowledge along these lines is found in the work of Crile in his promulgation of the "Kinetic Theory," wherein he considers the manner and form of conversion of potential into kinetic energy. The mechanism of this transformation by means of a system of energizing organs adapted to this end, explains the phenomena of exhaustion, when over activation disturbs the harmony of this mechanism. He explains how the driving force, nervous energy, when converted into work energy, subserves the needs of man; and, when environmental contact over stimulates functioning, certain so-called kinetic diseases result. Crile's work is one of the greatest contributions to modern medicine and surgery, and to me, is the one great contribution, which explains mental perturbations as we find them in the so-called "Toxic Infective Psychoses," and also, explains the physical phenomena of the anxiety neuroses and psychoses. It also is a great factor in studying the reactions of the individual to his environment as we find him under average conditions of daily life.

Another great field is that to be found in criminal psychology, especially where sex-psychology comes in to affect the validity of testimony. Gross, the great German criminal psychologist, has given us a masterly discussion of all of these factors in his work on "Criminal Psychology."

I have already taxed your time and patience with this rather desultory discussion of individuation, now let me conclude by saying that with this rather heterogeneous grouping of clinical facts and needs, we must resort to individual treatment in order to give them valuation and to obtain the end results desired in adjustment of the individual to the varied causative factors. We can no longer, in the light of accumulated facts in causation, be contented with perfunctory routine in treatment. No! the time has come when efficiency in treatment must be determined by the indications in each individual case. Curative methods are faulty when they lose sight of the individual and treat him simply as a case. Routine treatment has its place, but it is at best a perfunctory make-shift in which both patient and physician lose their identity and the art of psychiatry has another black mark registered against it. My appeal, therefore, is for individuation with treatment; treatment with individuation, and thus make our work an honorable contribution to the science and art of psychiatry.

REFERENCES.

Partridge: Outline of Individual Study. Sturgis & Walton.
Healy: The Individual Delinquent. Little, Brown & Co.
Healy: Pathological Lying, Accusation and Swindling. Little, Brown & Co.
Gross: Criminal Psychology. Little, Brown & Co.
Stanley Hall: Adolescence. Appleton & Co.
Jones: Psycho-Analysis. William Wood & Co.
Freud: Theories of he Neuroses. Journal of Nervous & Mental Disease.
Munsterberg: Psychology, General and Applied. Appletons.
Jastrow: Character and Temperament. Appletons.
Cannon: Body Changes in Pain, Hunger, Fear and Rage. Appletons.
James: Psychology and Life's Ideals. Henry Holt & Co.
McDougall: Social Psychology. Luce & Co.
Minot: Age, Growth and Death. Putnam & Sons.
Cabot: Social Service. Moffat, Yard & Co.
Ziehen: Physiological Psychology. Sonnenschein.
Bateson: Problems of Genetics. Yale University Press.
Jung: Psychology of the Unconscious. Moffat, Yard & Co.
Crile: Man, an Adaptive Mechanism. Macmillan.
Bell: The Sex Complex. William Wood & Co.

ANGINA PECTORIS.*

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Like many of the diseases described in medical literature, the name was not given because of any definite knowledge of its pathology, but to describe certain kinds of pain in various regions of the body, or the clinical appearance and symptoms of the patient during the manifestations of his agony.

Such was the disease described by William Heberden in 1768, "as a disorder of the breast," to which he gave the name "Angina Pectoris"

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based on the study of twenty cases. Dr. Osler says he had reached a fellowship before he saw a case in hospital or private practice, and that an average of about one case a year is seen in the wards of the large general hospitals.

For apparent reasons, sex is a notable factor in the frequency of this disease. In 268 cases reported by Osler only 37 were women. From my perusal of the literature I do not believe individual statistics are of much value on this point. But it is safe to say that the disease is much more prevalent in men than in women.

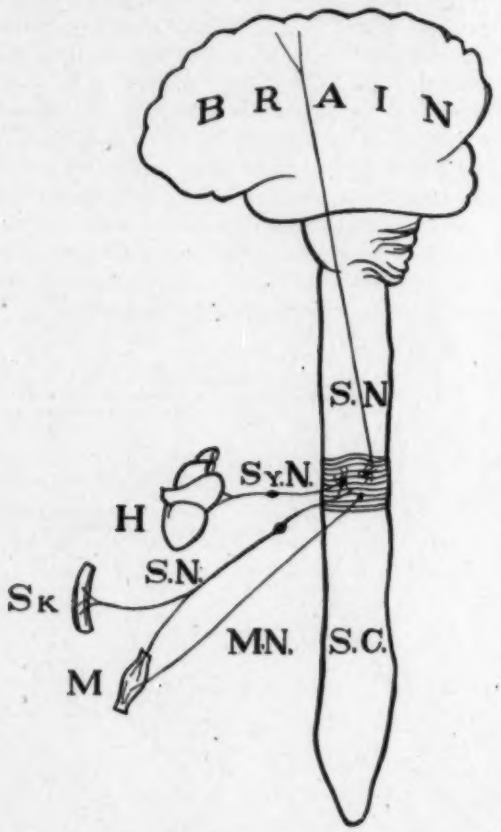

Fig. 1. Diagram showing the mechanism producing visceral pain. From H, an abnormal stimulus is conveyed by the sympathetic nerve (Sy. N.) to the spinal cord S. C. On reaching the cord, the abnormal stimulus spreads beyond the sympathetic center, and affects nerve cells in its immediate neighborhood. The cells so stimulated react according to their function, the sensory causing a sensation which the brain recognizes as pain, and refers to the peripheral distribution of the sensory nerve (S. N.) in the skin (Sk.) or muscle (M), the motor (M. N.) producing contraction of the muscle (M). The abnormal stimulation may leave a portion of the cord abnormally irritable (shaded portion), so that the tissues supplied by nerves from that portion of the cord are hyperalgesic, and attacks of pain, as of angina pectoris, are more easily provoked.—Mackenzie, Diseases of the Heart.

The greatest number of victims of this disease are past adult middle life, too often just as the individual is approaching or has reached the zenith of his career. Hence the highest mortality is recorded in the fifth decade.

As an excuse for introducing some historical references I give the following from a recent author on this subject. He says, "I have quoted the sources at some length and even attempted to paraphrase the essential statements of Heberden, because nothing I venture to state makes a subject like this more lucid than its historical aspect."[1]

An interesting point in the etiology is disclosed by Osler in his reference to the prevalence of this disease in a certain race of people, particularly in the United States "where a rapidly growing country gives scope to their exceptional genius for business. Living an intense life; absorbed in his work; devoted to his pleasures; passionately devoted to his home; his nervous energy is taxed to the utmost, and his system subjected to that stress and strain which seems the basic factor of so many cases of angina pectoris."[2]

The literature further discloses the fact that angina pectoris is an affection of the better classes, and not often seen except in private practice, also the frequency of the disease in the medical profession. There may be an added panacea to us in this statement. For the same reason Osler quotes Sydenham, saying when speaking of gout, "More wise men than fools are afflicted."

Shortly after the description of this disease by Heberden, the diagnosis of angina pectoris was made in the case of John Hunter by his brilliant pupil, Edward Jenner. "From this time, a long list of distinguished men in the medical profession have been its victims. Nothnagel, one of the ablest students of this disease, and himself a sufferer, described his own fatal attack. 'Angina attacks with very severe pains, pulse very variable, 56 to 60, quite regular, high tension, again rapid, 80 to 90, tolerably even. Again arthymic, at one time unequal, rapid at another, slow with changed tension. The first sensation of this attack dates back three to four years, gradually be-

1. Stein: Medical Record, July 24, 1915.
2. Osler: Lumleian Lectures, Lancet, Mar. 12, 1910.

coming more pronounced. Severe attack came on with severe pain, the last five or six days.' This was written late in the evening, after three very severe attacks. Within a few hours after this note, the end came."[3]

Charcot died in an attack in the arms of his friend Straus, who himself succumbed to the disease shortly afterward. As stated by one of his contemporaries, the most brilliant and devoted physician of his generation in our own country, Dr. William Pepper, died with coronary arteries like pipe-stems. "As a teacher, consultant, a prolific author, in him was found typically the restless American spirit which drove him into a premature grave at the early age of 55. It seems that in the history of most of these men, the added factor to work was 'worry.' "[4]

The lucid style and fascinating manner in which Osler presents the subject of angina pectoris in his lectures, illustrating each type or classification of the disease, reads like a story. But in the last few years, this difficult subject has been attacked in a more direct way and with the assistance of the polygraph and electro cardiagraph, the general study of heart diseases has changed our notion of many things. It, no doubt, is true as Osler says in his second Lumleian Lecture that had Heberden listened to his first lecture he could have remarked, " 'Well, they are not much ahead since my day.' In descriptive symptomatology, we are not. He had the good sense not to say much about the cause of the disease and the good fortune to get close to the truth in what he did say."

Nothnagel ascribed it to spasms of the coronaries with consequent local ischemia. Huchard divided angina pectoris into true and false: that produced by effort he called true; that without effort, false, and attempted to prove that every case was due to an affection of the coronary arteries.

The frequent indiscriminate use of such terms as "false angina pectoris," "angina sine dolore," "angina vasomotoria," "angina vera," with no clear sense of their etiology or pathology has added to the difficulty of comprehending the fundamental causes of precordial pains.[5]

Under conditions in which angina pectoris is produced, Mackenzie says that if a large number of patients be studied, symptoms of angina pectoris will be found to arise in patients with the most diverse forms of lesions and even in patients without any evidence of cardiac disease, and quotes a number of cases to show that angina pectoris can arise in cases of over-strain, aortic aneurism, aortic valvular disease, atheroma of the coronary arteries, myocardial degeneration, or enfeeblement of the heart muscle from poor nourishment, increased arterial pressure, sudden changes in the rate and rhythm of the heart, temporary conditions of obscure origin, and senile changes.[6]

In the studies of those investigating this subject in the past, it seems to have been their effort, as stated before, to attribute a definite pathology to the disease upon which to base a classification of its symptomatology. Many of these have been touched upon in our discussion to show the protean manifestations of this disease. It has been definitely shown that lesions of the coronary arteries are one of the most common pathological findings. (a) Narrowing of the orifices as an accompaniment of syphilitic aortitis, especially of the supra-sigmoid portion. (b) Blocking of a branch with a thrombus is a very common cause of death. Herrick mentions having seen six cases, with post mortem findings in one. The one who survived the longest died in twenty hours. The symptoms differentiated from the usual attacks are those of profound shock with a small, rapid pulse, 140 to 160, and with pain unremitting.

Cases are described by various authors of coronary arteries exhibiting the appearance of open, bony tubes, as in the case of John Hunter and William Pepper, or the destruction of various branches to obliteration of almost the entire coronary circulation. Osler says, "A man may get along very comfortably with only the main branch of one coronary artery, practically one-fourth of the whole system; that the coronaries are not end arteries in the sense of Cohnheim, and diseases of their branches are not necessarily associated with angina."

The pathological findings have not been in accord with the clinical theory that the pain is necessarily dependent upon atheroma of these arteries, "as persons suffering from typical anginal attacks frequently fail to show on post-

3. Osler: Lumleian Lectures, Lancet, Mar. 12, 1910.
4. Osler: Lumleian Lectures, Lancet, Mar. 12, 1910.
5. Neuhof: Journal A. M. A., Mar. 4, 1916.
6. Mackenzie: Diseases of the Heart, p. 71, 1915.

mortem any lesions in these vessels, while those never having suffered from angina pectoris frequently show extensive coronary lesions and obliteration of an artery."[7]

As stated by Richard Stein, "Unfortunately, the large subject of visceral pain and colic is still in all its bearings a matter of contention among physiologists and clinicians."

"It is impossible for the physician," as Allbutt has said, "to draw a parallel in the living patient between the formidable work of decay described by the pathologist; how and when these degenerations are manifested; how in the long course of cardiac decay, the imminence of death is to be foreseen and provided against; or how we are to know any such process is at work at all; or lastly, how in a case of known heart disease the degree of its advancement and the cardiac reserve are to be noted and tested."

"Thus we have the physician and the pathologist trotting each on his side of the hedge, each intent upon his own scouting and his own bearings, and neither able as yet to reconcile his own observations with those of his comrades."[8]

The best explanation of angina pectoris, quoting Mackenzie: "that it is not a disease but that it is merely a group of symptoms which afford no clue as to the real nature of the heart's complaint, so that inquiry must be made for other evidence which will elucidate this problem."

We wish to further emphasize the statement that angina pectoris can arise in cases with such varied existing conditions and symptomatology. (a) That it may occur in hypotension as well as in hypertension. (b) In all forms of cardio vascular disease, with myocardial insufficiency. (c) In acute rheumatic endocarditis and rheumatism, many complain of sticking pain which they localize in the heart. (d) And other causes already mentioned. There can be no doubt but that the results of such diseases as pneumonia, typhoid fever, enteritis, and above all influenza and pseudo influenza pave the way for a frank attack. Contrary to the statement that angina is not inflammatory, rectal temperatures will elicit from one to two or three degrees of fever. One case of mine showed rise of temperature until improvement began.

An attack of angina pectoris is usually led up to by a period of gradual exhaustion and comes as it were when the last straw is laid upon the load. No doubt many more casual factors are present than were formerly considered.

"That the blood stream may carry abnormal chemical products that will excite an attack by its influence on the nervous mechanism of the heart is no doubt true."[9] One case of mine had a severe acidosis, with acetone and diacetic acid in the urine.

Case 1. Male. A man of small stature, fairly well preserved, 71 years old, weighed about 125 pounds, worked in his early years as a mechanic and contractor, but for 25 to 30 years had lived a quiet, retired life; a man of extreme intensity in either physical or mental work. About 1904, I first saw him as a patient, when he complained of stomach trouble and constipation. At this time he was carrying out with his usual intensity a diet, suggested to him by friends, of coarse breads, bran eaten raw, and taking only sparingly of meat. With treatment and advice over a short time he was able to eat a general diet and constipation was relieved. At this time, there was some evidence of contracted kidneys and blood vessel changes. Owing to his excellent habits, using neither tobacco nor alcohol in any form, and his easy, comfortable way of living,—having no family but his wife,—a favorable prognosis was predicted for him. Following a winter in the south, his general health became excellent with no further symptoms of stomach trouble.

In order that he might keep himself well and vigorous, he believed strenuous exercise was necessary. He would rise at 5 o'clock and walk about half a mile to a spring, where he usually drank about two pints of water. Frequently, as he told me afterwards, he would run some distance and never felt short of breath. For several years he added to this exercise by disposing of any trees not desired in the neighborhood, having a man haul them to his back yard in the city, where he put in his spare time sawing and splitting wood.

In April, 1915, just after finishing a task of this kind, he called to consult me about an acute pain in the epigastrium. About 3 a. m. of the next morning I was hastily summoned, when I found him suffering from the most intense attack of steno cardia. The pain had commenced, as it did the night before, in the region of the stomach and spread to the left side of the chest, extending first down to the fingers of the left hand, then to the right arm and fingers and involving the muscles of the left side of the neck and throat, including the muscles of the mouth, giving an appearance of paralysis. The face was pale, bathed with perspiration and wore an expression of deepest anxiety. The pulse was full and regular, about 60. He talked with great effort and only when it seemed there was a relaxation of the gripping sensation. Mor-

7. Price: International Clinics, ii., 21, 1915.
8. Elsner: Archives of Diagnosis, p. 302, Oct., 1914.
9. Foster: Archives of Int. Med., p. 236, March, 1915.

phia, gr. ⅙ and atropin, gr. 1/200 was given hypodermically, from which he soon expressed himself as feeling better. He seemed to be afraid to speak or even move at first, but begged for relief and if possible, to prevent another attack, as he felt he could not survive it. There was a marked odor of acetone to the breath and the urine was of a high color and showed a few granular casts.

The next day he called in his attorney and made final disposition of his affairs. Under the care of a nurse, with administration of alkalies per mouth and high colonic flushing, the patient left his bed at the end of a week, feeling well and refused to longer have any special attention. I cautioned him about using an upstairs bed-room on account of climbing the stairs, but this he thought was not necessary.

On July 25, after attending to some business matters down town and as he admitted, climbing a steep pair of stairs two or three times to see a man, he again had an attack with the same symptoms as before and was unable to get any relief without amyl nitrite pearls. When I called the next morning, he was sitting in an arm-chair where he had spent the night. His pulse taken from the chart ranged from 60 to 70, sometimes as high as 80. He coughed at times and expectorated a foamy, yellowish sputum. The patient felt very nervous and weak, pulse was also very weak at times. Heat applied to left shoulder and precardium seemed to relieve the pain. Blood pressure taken each day ranged about S-120, D-60. As in the previous attack, at no time had his blood pressure been more than 130. I had the opportunity to take his blood pressure during the oncoming of a violent attack. Blood pressure went up to S-190, D-90, but when the paroxysm was relieved, dropped back to usual point, only remaining at this point about one hour. The amount of urine had been about 60 to 70 ounces in 24 hours, passing about two-thirds of this amount in the twelve-hour night period, but there was a gradual decline in the output.

August 3, began having hallucinations of people standing about his bed. Pain severe, at times relieved by amyl nitrite pearls or hypodermic of morphia. He began showing two or three degrees of fever and the urine dropped to 21 ounces in 24 hours. Blood pressure lowest at this point, S-90, D-52. About this time he became unconscious for 48 hours. Features pinched and skin of ashy color. The precordial pains gradually subsided, blood pressure ranging about S-120, D-60, a few times as high as S-150, D-80. In about six weeks he was able to sit up, all pain had subsided and patient slept comfortably. Later, after beginning more exercise, the discomfort began annoying him. Shortly after going to bed at night he could not sleep while lying down and even undressing would excite an attack. I found upon inquiry that he had began using an upstairs bed-room, which being discontinued, he was able to sleep all night and felt much improved. He found by omitting the evening meal that the attack was less likely to occur and the night spent more comfortably. This patient, unfortunately, like many sufferers of angina pectoris, has an irascible disposition and not unlike John Hunter, who was wont to say that "his life was in the hands of any rascal who choose to annoy or tease him." Two serological examinations were made from two different sources, one positive; the other, negative. I do not believe there is a possibility of spyhilis in this case. The heart is enlarged; left dulness, 3 cm. outside of nipple; right dulness, at the right margin of the sternum. There is a systolic murmur and an arythmia present at all times. I believe this case has an aortitis with involvement of the coronaries.

This case illustrates an important symptom mentioned by Osler and a point in differential diagnosis in that the pain began in the region of the epigastrium and he spoke of no other complaint. Osler says the difficulties in diagnosing these cases that resemble the tabetic crises may be very great. The statement of a condition of acidosis being present in angina pectoris conforms to recent studies in nephritis with hypertension which is often accompanied by abnormal amounts of non-protean nitrogen and a diminution of blood alkalinity and comparative acidosis. Crile in his theory of the "kinetic" drive says, "Energy transformation depends upon the maintenance of the alkalinity of the blood, and the means by which the acid by-products which are always found in the transformation of energy can be neutralized and eliminated. * * * Cardio vascular disease bears an intimate relation to foreign protean activation and to nerve strain."[10]

As Osler says, "There are two primary features of the disease, pain and sudden death,—pain paroxysmal, intense, peculiar, usually pectoral, and with the well known lines of radiation, —death in a higher percentage than any known disorder and usually sudden. Often indeed, as the poet says, 'Life struck sharp on death.'" So we ask ourselves, what is the cause of the pain and why if angina pectoris is a disease of the heart, the pain ofttimes begins remotely from that organ. One of the best explanations for these questions is given by Mackenzie.

In the diagram, (H) represents the heart and its nerve (Sy. N.) is seen passing to the spinal cord. In the normal processes of life a stream of energy from the heart is continually passing by the afferent nerves to the spinal cord, and continuously playing upon the efferent nerves that run to muscles, blood vessels, etc. These processes are conducted so that they give rise to no appre-

10. Crile: Journal A. M. A., Dec. 18, 1915.

ciable sensation. If, however, a morbid process in the heart gives rise to an increased stimulation of the nerves, passing from the heart to the spinal cord, this increased stimulation affects neighboring centers. If it excites the sensory nerve, as shown in the diagram, passing from the skin to the brain, the resulting sensation will be referred by the brain not to the heart, but to the peripheral distribution of the sensory nerve. Thus the pain in visceral disease is seen to be of a reflex character—*a viscero-sensory reflex*. The motor nerve (M. N.) is shown arising in the cord and passing to a muscle (M.). The stimulus from the heart passing into the spinal cord may excite the cells of origin of the motor nerves, thereby exciting the muscle to contraction; hence the *viscero-motor reflex*. (See accompanying diagram.)

Causes leading up to or inducing an attack of angina pectoris. The individual may have been in his usual health, following his daily vocation without having noted any previous discomfort from his heart when the ominous symptom, pain—light or severe—comes as a warning like Hamlet's ghost. There has been some insidious change going on, producing one of the many conditions that we find in cardio vascular diseases upon which is superimposed an added burden from over exertion, an error in diet, or the perverted function of organs that have to do with the chemistry of the body.

Angina pectoris usually appears as a late symptom after the heart has been struggling a long time against the obstacles opposed to its efficient action or after the nutrition of the muscle has been impaired by gross pathological changes. The attack in most cases does not come on at once unless the effort is persisted in and the first warnings of heart exhaustion are ignored. The pain may not make its appearance until some hours afterwards, or, as in my case, at 3 o'clock in the morning. The length of an attack may vary from a few seconds to one of several hours, only to be relieved by the help of "God's own medicine —morphia."

The pain is usually referred to the upper four dorsal nerves, in the chest and arm, and as low down as the sixth dorsal nerve in the epigastrium. In the case cited, the pain was felt in the neck and back of the head, that is, in the cervical nerves, whose roots are in close association with the vagus.

Case 2. Male. In October, 1915, consulted me because recently he had been unable to walk more than one or two blocks without shortness of breath and pains appearing in both wrists that were so severe that he would have to desist. After sitting down and resting a short time, the dispnea and pain would subside. A physical examination and functional tests showed he was suffering from an advanced myocardial condition. There was found a pure culture of colon-bacilli in the urine and an x-ray of some suspicious teeth disclosed the necessity for their extraction on account of focal infection. This patient, by appropriate rest, digitalis and Nauheim baths is now able to walk leisurely a half mile. An interesting feature of the case was pain in both wrists but without precordial pain. The blood pressure at first was S-115, D-100, but on digitalis the S. is now 130 and D-90. Wassermann negative.

Case 3. Male. A very tall, spare man, 80 years old. Has arterial changes, not pronounced, with chronic bronchitis each winter. In April, 1910, he had been spading and working in his garden. The next day, Sunday, while walking back to the barn he became unconscious and fell, where he was found attempting to sit up in a dazed way. There was no evidence of paralysis when I saw him and he was perfectly conscious. He said when he enlisted and was examined in 1861 his pulse was 50. This bradacardia I had noticed many times before. The patient's pulse at this time was 37, with an arythmia. He complained of being very weak, vomited and sweated. In a few hours he began to complain of pain in the left chest and shoulder, extending down to the left arm. The next three or four weeks he suffered the most intense agony from the precordial pains from which he begged for relief, fearing death. He was kept in bed most of the time for six weeks with constant attendance, and is now in fair health at 86, not having had any recurrence of his first and only attack. His blood pressure at no time was higher than S-110 and D-60, pulse 50. The condition causing him to suddenly become unconscious and fall I thought to be one of heart block or of Adam Stokes syndrome.

The prognosis in a case of angina pectoris must be based upon the clinical findings, the integrity of the myocardium, the habits and environments of the patient, and the ability of the heart to recover from its exhaustion. The tragic ending of so many of these cases have so influenced the minds of the profession and laity that a sufferer from this disease is looked upon as having a grave prognosis. "The severest attack is not necessarily serious, nor the mildest free from danger."[11]

When the degenerative cardiovascular changes

11. Mackenzie: Diseases of the Heart, 1915.

are not progressive, and the patient who has an impaired circulatory apparatus from disease or senile changes can be prevailed upon to carry a lighter load, with rest and care he may live many years of usefulness in comfort.

The prognosis becomes grave when there is only slight response to treatment, and especially when the disease is accompanied by such grave symptoms as cardiac asthma, pulsus alternans and Cheyne-Stokes breathing.

Treatment naturally divides itself into improvement of the heart with the conditions which influence its work and the relief of pain during an attack. A treatment directed alone to the medication of the symptoms without an effort to determine actual conditions is doomed to failure. Food, digestion, assimilation, kidney and bowel functions are to be considered as well as such factors as work, worry, insomnia, overindulgence in eating, alcohol, etc. As a temporarily exhausted muscle in the majority of cases is the cause of the attack, the simple assurance of a favorable prognosis will greatly relieve the patient. Two of my cases have been much improved by a course of Nauheim baths. Where there is an indication of impaired myocardial function in either hypotension or hypertension, I have found digitalis to be undoubtedly of value. I have given the iodides many times and over long periods without any apparent benefit so far as I could see only where syphilis was suspected.

The treatment during an attack when severe demands our best judgment in securing relief quickly and safely. Where nitrite of amyl pearls are found to be of benefit the patient can be supplied to use in sudden attacks. Nitroglycerin, gr. 100, will give relief in some cases and entirely fail in others. Morphia in small doses, gr. 1/8 *pro re nata*, I have found to be more efficient than any other remedy. This may be combined with atropin, especially where there is suspected ischaemia of the heart from coronary involvement. Hot applications in the region of the heart with hot drinks are of value. In one case a physician tried strophanthine intravenously, only to have his patient die in a few minutes after his departure.

I believe the prognosis and treatment of angina pectoris could be rewritten in yet a more favorable light if we would insist, as in tuberculosis, upon early diagnosis and treatment of cardio vascular diseases.

Leland Office Building.

DISCUSSION.

Dr. Buckmaster, Effingham, called attention to the similarity of cases of pulsus alterans and of heart block; in angina pectoris it is simply a heart muscle that has lost its power. The question of heart block is a different proposition in the sense that the impulse is not conducted from the origin in the auricle into the ventricle as it should be and to a certain extent the same feature operates in the pulsus alterans; but the essential feature is degeneration in some place in the heart which lessens its efficiency.

In angina pectoris the heart muscle is not nourished for the time being and it gives out. The best thing with those cases is to make them live within their limitations and thus lessen the danger and severity of the attacks.

One patient may be taken care of over a period of time and temporary improvement obtained. His range of possibilities will gradually increase until he may lead a fairly useful life. Another one may not be able to be active at all.

Another condition in very close relationship with this is syphilitic aortitis, high blood pressure and sclerosis affecting the beginning of the aorta and a portion of the heart, with damaged heart valves. The luetic aortitis will affect the area all the way around the arch of the aorta and sometimes on down in the descending portion, but ordinarily it will end about the ending of the aortic arch. In his opinion a positive Wassermann indicates syphilis in all probability, but if it is not positive the patient may still be syphilitic, as only about 50 per cent of hibernating cases of syphilis give a positive Wassermann.

The spirochete hibernates in the arch of the aorta and the base of the heart more frequently than anywhere else.

Dr. Iknayan, Charleston, noted the etiology as ascribed to the presence of diacetic acid and other fatigue substances in the blood. It seemed to him, with the etiology of these cases as understood and described by the essayist, that angina pectoris is certainly very common and that probably we were making it entirely too common. The failing heart many times manifests itself by painful symptoms, and whenever you succeed in raising the blood pressure, especially in increasing the pulse pressure, you get relief, and sometimes, by relieving the pain, morphine itself is a stimulant. It not only stimulates but it quiets the fear of the patient.

Dr. Munson (closing the discussion): In the matter about which the last doctor has spoken, that acidosis was simply a coincidence and not a cause, I am sure if the doctor looks up the recent literature he will find that this condition is more incident to the disease than was formerly believed. I also believe that angina pectoris is frequently overlooked, for, as the doctor says, "it is so very common that pain may be

coincident with any condition of the heart." But unless the patient has a typical cardiac attack, such as is described in the text books, the physician will not make a diagnosis because he is not sure, and because he is always thinking of the classical symptoms in the text book. I am sure that anyone who has read MacKenzie's book on the diseases of the heart and his article on angina pectoris will feel that the chances are that you will overlook some of these cases. In angina pectoris, in certain cases, we have pathological lesions which we can discover and which, no doubt, cause the disease. In other cases, as stated in my paper, a portion of the coronary artery may be obliterated entirely and yet the person will never have an attack. Consequently, I would lay particular stress on the point of determining the actual conditions and of treating the patient according to the findings.

THE RESPONSIBILITY OF THE MEDICAL PROFESSION IN THE MANAGEMENT OF THE HARD OF HEARING AND THE DEAF.*

JOSEPH C. BECK, M. D.,
CHICAGO.

In order to present this subject to you as forcibly as possible so that we may see results, I will take a great liberty, and probably severe criticism of my action will follow when I say that the profession as a whole, except those directly interested in this specialty, has practically ignored, yes neglected, to give this matter of hard of hearing and deafness the attention it deserves. The function of the ears has always, it seems to me, been treated as a sort of a side issue, yet from the economical point of view it is more serious to be hard of hearing or deaf than having tuberculosis and many other diseases to which the majority of doctors pay much more attention. From the social or esthetic point of view it is most desperate, and, aside from a few rarer mental conditions, a deaf or hard of hearing individual is the saddest and most unhappy human being one ever encounters. Have you ever compared an absolutely blind and a deaf person as to their frame of mind? The blind man has a smile in spite of darkness, and Milton's Paradise Lost is an example. The deaf man is morose, yet from the economic point of view there is no comparison, because the hard of hearing or deaf can do one hundred things, whereas the blind man can do only one. The possibilities for the hard of hearing and the deaf are also much brighter, owing to the marked enthusiasm and educational propaganda afoot. Another important fact in regard to the hard of hearing, especially if one can discover by special test that the nerve is not yet destroyed, or in the deaf mute, some undeveloped remnants or islands of hearing, is, that by treatment and education one may achieve results not dreamed of before. There are quite a number of institutions for the blind and deaf throughout this country and in Europe, but, in so far as the deaf are concerned, it is the hope and there is the possibility that these deaf will be removed to schools and made self supporting or even better. There is at the present time a very large portion of the population either hard of hearing or deaf; the exact number cannot be determined, although, owing to more modern means of treatment, the number at present is less than formerly. Of more importance than this treatment is the knowledge of most of the causes of hardness of hearing and the prevention of the same. It will be necessary therefore to call your attention to some of these causes and the essential points in their prevention or mitigation. Before doing so, permit me to refresh your memories as to the anatomy and physiology of the ears and their accessory structures. In order that one should hear, it is necessary that the sound be collected or gathered and for that purpose there is the pinna and the external auditory canal as far as the drum (Fig. 1, a and b); that these sounds be properly modulated and arranged for further conduction to the auditory nerve and for that purpose there must be a perfect vibration of the drum (Fig. 2), and the three little bones, hammer, anvil and stirrup (malleus, incus and stapes) (Fig. 3, a and b). The drum (membrana tympani) must have an equal air pressure on both its sides, namely, by way of the external auditory canal and by way of the Eustachian tube to the middle ear. (Fig. 4, a and b.) It is also essential that the small joints of the three bones have perfect mobility. Like any other drum, the human drum is tightened or loosened, according to the demand of certain sounds, and it is a semivoluntary muscle system that performs that function, viz., the tensor tympani (Fig. 5) and the non-striped muscle fibers of the drum itself. (Fig. 6.) To control the severe action of the

*Read before the University Extension Society, at Peoria.

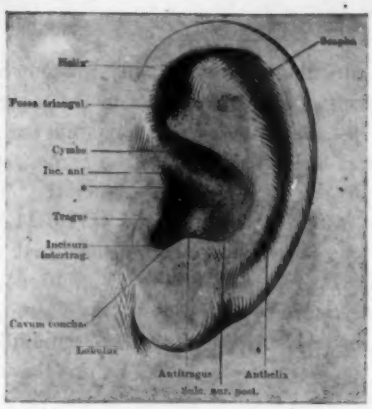

Fig. 1a.

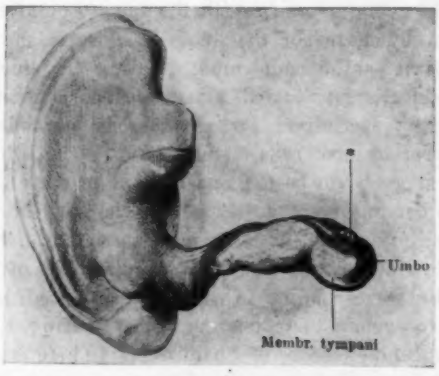

Fig. 1b.

Fig. 2.

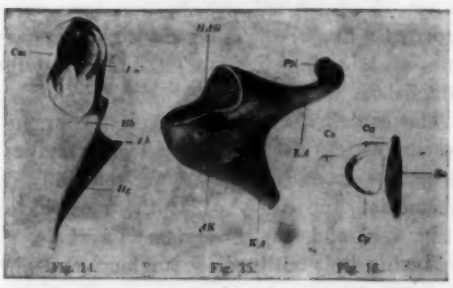

Fig. 3a.

Fig. 3b.

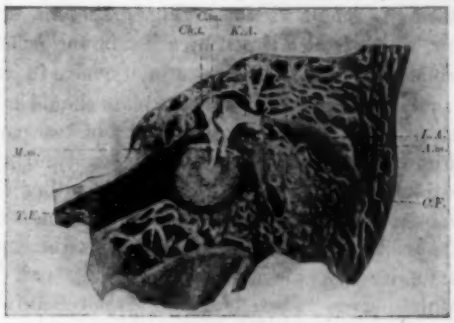

Fig. 4a.

Fig. 4b.

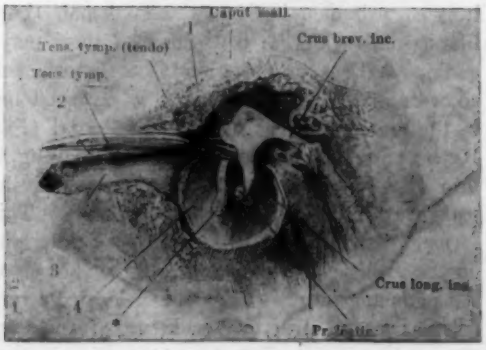

Fig. 5.

vibrating apparatus, in other words, a too great drive of the foot plate of the stirrup against the more delicate structures within the snail-like structure (cochlea), a guard muscle, namely, the stapedius (Fig. 7), is present. Where the stirrup fits there is an oval opening called the oval window, which is closed by the foot plate of the stapes. (Fig. 8.) This oval window opens into the most important part of the ear, namely, the internal ear. Slightly below this oval window opening and somewhat hidden is a round opening called the round window. (Fig. 8.) This window, which is also closed by a membrane (membrana secundaria), serves as a safety valve in case a sudden driving in of the foot plate should take place. The internal ear is made up of two parts (Fig. 9, a), known as the cochlear and the vestibular portions, the former controlling the function of hearing and the latter the function of equilibrium. Both are supplied by the same nerve, namely, the auditory or eighth pair of cranial nerves. There is still much not definitely proven about the function of the internal ear, as, e. g., concerning the saccule and utricle, the ductus endo-lymphaticus and ductus cochlearis, but there are some things definitely established, and that is the cochlea has to do with the function of hearing and the vestibule with the three semi-circular canals has to do with the equilibrium of the body. It is the cochlea that concerns us, particularly at this time. I will not go into any detailed description of this cochlea except to say that it contains the nerve of hearing. It is a tube of bone of very small caliber, lined by a membrane upon which is spread out the branches of the main trunk of the nerve of hearing. These may well be compared to the arrangement of the strings of a piano. In order that this tube of bone be accommodated in a small space, it is curved upon itself two and one-half times like a snail. (Fig. 9, b.) Some of these nerve endings have long fibers and some short, and accordingly are said to respond to certain tones in the musical scale. Through this canal (Fig. 10, a) runs the basilar membrane, dividing it into two divisions known, respectively, as the scala vestibuli and the scala tympani. This former division is again subdivided into the ductus cochlearis by another membrane known as Reisner's membrane. Below this is located a very complex nerve structure made up of the very finest end filaments and finally into nerve cells of hearing. (Fig. 10, a.) From the margins of these specialized nerve cells one can see a sort of feelers or hairs, which are the highest specialized portions of this entire structure. This is known as the Organ of Corti. (Fig. 11.) Between the bony and membranous canal of the cochlea is a very small space (Fig. 10, a), filled with a secretion analogous to the cerebrospinal fluid; in fact, that is what it is, communicating with the arachnoid spaces within the cranial cavity. This fluid is known as the paralymph. Within the membranous canal is also a similar fluid communicating with the cerebrospinal system by means of the ductus cochlearis and is known as the endolymph. Within the ductus cochlearis is situated a homogenous structure, highly specialized for response to movement, known as membrana tactoria (Fig. 10, a), which is supposed to be the real irritant to the aforesaid hairs of the nerve cells of the ends of the auditory nerve. It is the accurate action of this tactorial membrane on the particular hairs of the cells, corresponding to the sound produced, that is to explain the proper theory of hearing, t. i., the contact theory of Shambaugh. There is another much older theory of hearing, namely, the telephone theory of Helmholz, which, however, has not any more adherents than the Shambaugh theory. In other words, we have no definite proof as yet as to how hearing is produced. After the nerve endings are irritated, it is supposed that sound impulses properly registered and adjusted within the cochlea, are transmitted centrally, that is, towards the brain, by the auditory nerve (Fig. 10, b), and registered on the cortex in the temporal region. From there communications pass to the other portions of the brain concerned in hearing, in other words, the area where judgment or knowledge of the sense of hearing is located. This, too, is not definitely established as yet. There is not any question from clinical experience that the hearing and sight are closely associated, but how this is effected is not definitely established.

The contributory structures to the organ of hearing are, (a) the nasal and throat cavities or structures contained therein, especially the Eustachian tube (Fig. 12), the mastoid cells (Fig. 4, b) and, (c) the system as a whole.

Having thus outlined the anatomy and physi-

Fig. 6.

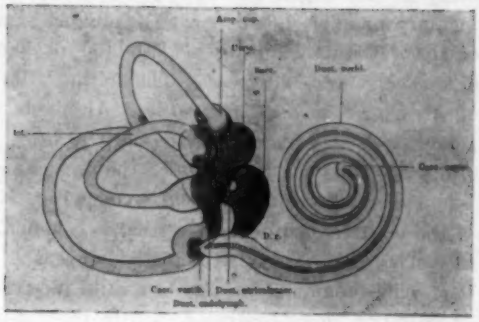

Fig. 9a.

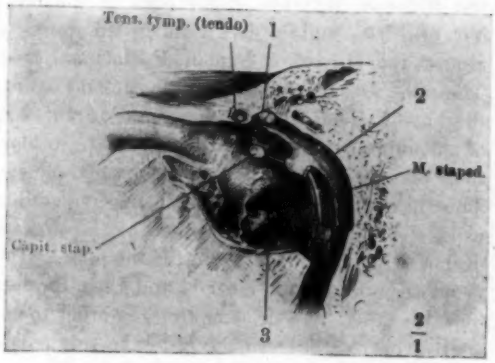

Fig. 7.

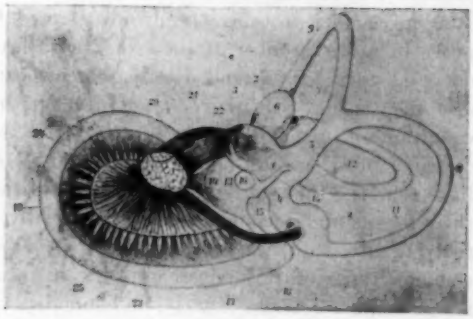

Fig. 9b.

Fig. 8.

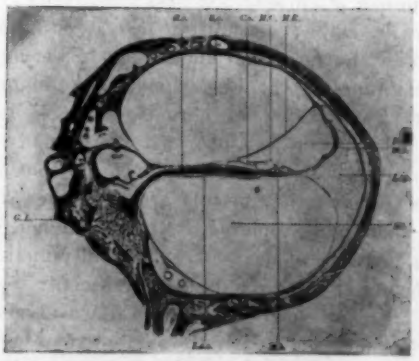

Fig. 10a.

ology of the organ of hearing in a very elementary manner, I believe we can discuss some of the varieties and causes (Fig. 13) of hard of hearing and deafness. The term "Hard of Hearing" is very *à propos*. Although it refers to the statement that it's hard to hear, it really describes the pathology of the great number of markedly or totally deaf. One (Fig. 14) of the most frequent causes is what is commonly known as *catarrh*. What actually happens is a low grade inflammation, due to a mild infection or irritation, long continued, within the Eustachian tube and middle ear. The end product is scar formation throughout its extent so that the Eustachian tube becomes narrow, the drum becomes thickened and in the joints of the ear bones, and about them is scar tissue which stiffens them. We must now go one step further, namely, to the original causes of the so-called catarrh. Sufficient time has already elapsed to prove in a fair number of cases that have been operated upon for adenoid disease, which means also the tonsils, that they do not develop this condition of the ears as readily as those not operated upon, and we have every ground to believe that the thousands of cases that have had their tonsils and adenoids removed, especially if early in life, will escape this malady. Another common cause of this affection is the sequence of an acute infection, namely, inflammation of the nose and throat, no matter whether associated with the exanthemata, acute rhinitis or tonsillitis. The thing that happens is that the rhinitis and the tonsillitis disappear, but the changes in the Eustachian tube and the middle ear do not. If at this time the patient gets proper attention he may escape the chronic catarrhal deafness. What is proper attention? At first non-surgical measures by skilled specialists, such as accurate inflation and medicinal application to the mucous membranes of the Eustachian tube and middle ear. Then, if there are chronic obstructive lesions in the nose or naso-pharynx, they usually have to be dealt with surgically. If the tonsils are diseased and they usually are, then they should be thoroughly removed. A very common cause for this type of deafness is the faulty method of blowing or cleaning the nose, especially if, as is so frequently done, the people use a nasal wash or douche, particularly the sniffing of water from the palm of the hand. Since the specialists as well as the general practitioners recognize this deleterious action, we see less of the so-called acute infectious otitis media from this cause. I may be pardoned in describing the proper mode of blowing or cleansing the nose in order to show how easy it is to cause the inflation of the ear and thus carry the infective material from the nose to this place, when one is not familiar with this fact. There is no case on record from the animal hospitals of any of the lower animals having an otitis media, and yet we know that they have infectious diseases, especially of the nose. You all know the (Rotz-Kranheit-glanders) of horses, but they do not develop any ear complications. I was curious about this, so I went to the trouble and dissected a head of a horse, in special reference to the Eustachian tube and the ear, and I found an enormous width of the orifice of the tube in the back of the nose, but near the middle ear it narrowed down to almost the size of a human Eustachian tube. The same was true of the middle ear and drum; they are extremely small compared to the size of the animal. The animals do not have to blow their noses, at least do not use any handkerchiefs. This habit of culture, at least of civilization, using the handkerchief, is responsible for a great deal of trouble in the following manner. The people compress both nostrils and then forcibly blow the nose. At this same time, in order to get a great deal of force to the blast the soft palate is pushed up almost to a closure. What else can happen but that the air and secretions must pass into the Eustachian tube and the middle ear. I do not mean to say that one should not use a handkerchief, but one should not compress the external nose when blowing, and one should not use excessive force. If the secretions can not be cleared out easily, then wait until they become more liquid, or see if there be some chronic nasal obstruction which should have proper attention. Particularly during an acute rhinitis one should caution the people against blowing the nose forcibly and faultily. Many people in using the nasal douche force the solution into the Eustachian tube and middle ear, producing this chronic ear trouble, and hardness of hearing.

The *second* (Fig. 15) great form of disease causing hard of hearing and deafness, known commonly as running ears, occurs during the acute inflammation of the nose and throat, or

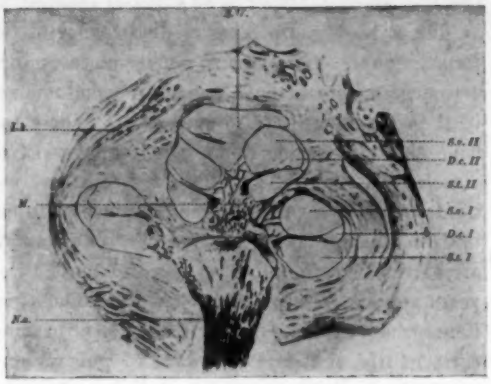

Fig. 10b.

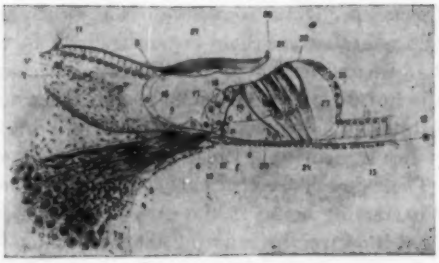

Fig. 11.

Fig. 12.

VARIETIES.

I. Dry catarrhal deafness.
II. Running ear deafness.
III. Family deafness.
IV. Congential deafness (Born deaf)
V. Infant Deafness.
VI. Occupational dearness.
VII. Poisoning deafness.
VIII. Injury deafness.

Fig. 13.

DRY CATARRHAL DEAFNESS.

Synonyms or other names.

I. Chronic catarrhal inflammation of the middle ear.
II. Chronic non-suppurative inflammation of the middle ear.
III. Otitis media catarrhalis chronica.
VI. Otitis media chronica non-suppurativa.
V. Chronic adhesive inflammation of the middle ear.

Causes.

I. Tonsil and adenoid disease.
II. After effects of an acute inflammation of the nose and throat not properly taken care of.
III. Chronic nose and throat construction.
IV. Faulty clearing or blwing the nose, especially after the use of nasal douche.

Treatment.

I. Remove the causes.
II. Intelligent treatment to the ear and Eustachian tube.
III. Educational by expression or lip reading.

Fig. 14.

RUNNING EAR DEAFNESS.

Synonyms. or other names.

I. Acute otitis media suppurative.
II. Chronic suppurative inflammation of the middle ear.
III. Otitis media purulenta chronica.
IV. Chronic otitis media suppurative.

Causes.

I. Associated or following an acute cold in the head.
II. Associated or following severe sore throat.
III. Associated or following the contagious diseases such as measles, scarlet fever, diphtheria, grippe and pneumonia.
IV. Contaminating these acute cases in treatment.
V. Poor or no care of the acute cases allowing them to become chronic.
VI. Associated with chronic infection of the nose and throat.

Treatment.

I. Good care of the original cause and instructions in avoiding the blowing of secretions into the Eustachian tube when blowing the nose.
II. Avoid contamination.
III. Proper care of the chronic discharging ears. Eventually removing the infected and obstructing tissues of the nose and throat.
IV. Radical operation of the chronic discharging ears when simpler treatment will not suffice.
V. Educational by expression or lip-reading.

Fig. 15.

when a person has a chronic suppurative condition of the nose and nasal accessory sinuses and the infection extends or is forced into the tube and ear, and there is set up a violent inflammation which frequently leads to suppuration in that locality. Whether such processes cause chronic deafness or even complete loss of hearing depends almost entirely upon the management of this acute ear trouble. In former years most of these cases became chronic suppurative ears, which not only markedly reduced or destroyed the hearing, but many such cases developed brain abscess, meningitis and blood poisoning from sinus thrombosis. In the last ten years most of the chronic suppurative ears have been cleared up principally by a radical mastoid operation, and one does not hear so often the old remark which was given to a patient, "That as long as the ear ran there was no danger"; but look out if it stopped. It is the duty of every physician to see that this great menace to health and life is done away with by proper treatment, and at the same time prevent a larger group of people from becoming hard of hearing or deaf.

The *third* (Fig. 16) great type of ear disease causing hard of hearing and deafness is one of comparatively recent information, although it has been recognized as an entity for a long time. It used to be called "family deafness," because it occurs in groups of families and appears to be hereditary. We speak of it now as otosclerosis, which literally translated means hardness of the ear. It is also very frequently confounded with sclerosis of the middle ear, the condition already described as chronic catarrhal deafness, by men not versed in the specialty. It is absolutely of a different pathological process. While the ultimate result in this process is hardening of the bone of the cochlea, particularly in the larger portion of the coil near the oval window or foot plate of the stirrup, it is a softening process in the beginning and is known as spongification of the labyrinth. It is not at all an inflammation, but is a retrograde change in the bone from the well formed, back to the embryonal stage. What the cause is, no one has yet proven. I wish to claim with hesitancy and modesty a theory, that it is a change due to the disturbance of the glands of internal secretion, particularly of the hypophysis and adrenals, in their deficiency or hyposecretion. I base this theory upon the comparative study of other bone diseases claimed to be due to the same process of disturbance of internal gland secretions. Such diseases are acromegaly, osteomalacia and the normal change in the early months of pregnancy. In these the bone shows the same microscopic changes as in otosclerosis. Accordingly have I given these patients hypophysis and adrenal gland by injection and feeding with no idea of a cure but to arrest the disease. Practice for the past three years appears to bear out my theory. These patients usually begin to lose their acuity of hearing early in life, that is at the time of puberty and as a rule go right on until complete deafness or nearly so takes place. The recognition clinically of this disease is usually that none of the catarrhal signs are present, the drum looks normal, in fact often shows a pinkish color through the drum. I have made a roentgenographic study of a number of these cases, especially early ones, and found that one could demonstrate on an x-ray plate this softening process in that the calcium salts are dissolved in comparison to other forms of deafness and the x-ray picture shows the difference in density.

These otosclerotic patients complain very much of harrassing noises in the ears and the deafness is not improved by inflating the Eustachian tube or for that matter by any other mode of treatment. As stated before it is frequently a family disease, so that there may be two, three or more develop the disease in one family. If the father and mother have the disease or give a family history of it, then their children are much more liable to develop it. Some of the states have recognized from this fact a possibility of ridding the race of this terrible malady by advocating and passing laws to prevent marriage, especially intermarriage of otosclerotics. This has not met with great success, however, and the argument is that some very great men and women, so history tells us, were otosclerotics, e. g., Beethoven, and it would have been a pity if he or others equally as great had not been born. In the conclusions of my talk I will speak of a method of treatment in all kinds of deafness, which will give some encouragement to these poor individuals, and which may substantiate the argument against the prevention of marriage of otosclerotics.

The *fourth* (Fig. 17 and Fig. 18) type of ear disease causing marked loss of hearing and deaf-

FAMILY DEAFNESS.

Synonyms or other names.

I. Oto-sclerosis.
II. Spongifying laoyrinth diseases.

Causes.

I. Not known.

Treatment.

I. Early education by expression or lip reading.
II. Stop the progress by the trial of adrenalin and pituitary gland extracts.

Fig. 16.

OCCUPATIONAL DEAFNESS.

Synonyms or other names.

I. Boiler makers deafness.
II. Gunners deafness.
III. Caisson deafness.
IV. Chemical deafness.

Causes.

I. Intense hammering in the boiler makers occupation.
II. Explosions and vibrations in the gunners occupation.
III. Vacuum in tunnels.
Iv. Poisons getting into the system or direct erosion of the tissue.

Treatment.

I. Change of occupation in most of the conditions.
II. Protection against impacts in the gunners and boiler makers occupation by wearing ear plugs.
III. Gunners keep mouth wide open during explosions.
IV. Antidotes against poisons.
V. Educational by expression or lip reading.

Fig. 19.

CONGENITAL DEAFNESS (BORN DEAF).

Synonyms or other names.

I. Deafness of the New Born.
II. Deaf mutism.

Causes.

I. Unknown.

Treatment.

I. Educational by expression or lip reading.

Fig. 17.

POISON DEAFNESS.

Synonyms or other names.

I. Toxic deafness.
II. Chemical deafness.
III. Syphilitic deafness.
Iv. Neuritis.

Causes.

I. Almost any poison particularly that following infective fevers as typhoid, scarlet, diphtheire and blood poisoning.
II. Lead, arsenic, antimony, mercury, quinin. Acids particularly sulfuric.
III. Alcohol and tobacco.
IV. Syphilis and malaria.

Treatment.

I. Proper care of the original infectious diseases.
II. Avoidance of the chemicals and proper antidotes.
III. Stop smoking and drinking.
IV. Specific treatment for syphilis and malaria.
V. Thorough elimination.
VI. Educational by expression or lip reading.

Fig. 20.

INFANT DEAFNESS.

Synonyms or other names.

I. Deafness acquired in Early infancy.
II. Deaf mutism.

Causes.

I. Usually following meningitis, either epidemic, septic or syphilitic.

Treatment.

I. Flexner Serum if of the Epidemic form.
II. Drainage of the cerebro-spinal fluid and meidicine if septic.
III. Medicine if syphilitic.
IV. Educational by expression or lip-reading.

Fig. 18.

INJURY DEAFNESS.

Synonyms or other names.

I. Traumatic deafness.
II. Pressure deafness.

Causes.

I. Fracture of the base of the skull, especially through the temporal bone.
II. Meningitis, brain abscess and brain tumors.

Treatment.

I. Removal of an abscess or tumor.
II. By medicines especially if meinigeal due to syphilis.
III. Educational by expression or lip-reading.

Fig. 21.

ness is that congenital or acquired in infancy, these patients being referred to as mutes or deaf-mutes. The cause of this unhappy condition of the congenital deaf is not known, but post-mortem examination often reveals the complete absence of the entire, or a portion of the auditory nerve or its end organs. In some of the cases there were found islands of normal nerve structures and these findings lead to the thought of possible education and stimulation of this remnant of the hearing organ. In the acquired deafness early in infancy it is usually a meningitis, which extends through the internal auditory meatus, into the labyrinth and completely destroys it. It is only in the treatment of the meningitis, especially if it be the epidemic form, that one may hope to prevent this deafness by the intraspinal injection of Flexner's serum. In the cases of syphilitic meningitis and labyrinthitis in infants, one may hope for much better results by proper anti-syphilitic treatment.

The *fifth* (Fig. 19) type of ear disease causing marked loss of hearing and deafness is one due to certain occupations. Any occupation where there is a great deal of noise produced as e. g. in a foundry, tends to affect the hearing very much. All of you are familiar with the deafness from the explosion of guns and especially on board of a battleship. It is well known to the gunners that they must keep their mouths wide open during an engagement in order to prevent the rupture of the drum, and the Japanese in their war with Russia claimed that the little rubber bags filled with alcohol which they wore in the external auditory canals prevented considerable damage to their gunners' ears. What modern device is used in the present conflict by the gunners of the large field guns by the various warring factions is not as yet made public. Alexander and others have shown by experiments on animals that by firing off revolvers at close range to the animal's ears minute hemorrhages in the internal ear occurs.

I have proven these experiments correct and went a step farther by trying to prevent these changes. Filling the external auditory canal from the drum membrane to the external auditory meatus with paraffin that has a melting point of 80° F. and then exploding a 45-caliber revolver from one to six times in front of this filled ear, I found no hemorrhages in the internal ear nor perforation of the drum membrane.

Another occupational disease in which deafness follows is caisson disease, where people work in deep tunnels in which there occurs a marked vacuum in the cavity of the middle ear and which produces hemorrhages in the labyrinth. Shorter hours in the tunnel and foundries are recommended. Occupations in which the individual comes in contact with certain chemicals, as lead, phosphorus, zinc and especially in fumes of sulphuric acid and arsenic have a tendency to affect the nerves of hearing by producing toxic neuritis. The giving up of such occupations is the only possible chance of stopping the progress of this disease.

The *sixth* (Fig. 20) type of ear diseases causing marked loss of hearing and deafness is the toxic form not due to occupation but usually secondary to other systemic diseases. Syphilis is by far the greatest factor and, as mentioned before, it can follow a syphilitic meningitis or one may have a true syphilitic bony involvement of the temporal bone. It has been my experience to find a marked positive Wassermann of the cerebrospinal fluid when that of the blood was negative. The treatment is very clearly antiluetic. In this connection one can mention the many nervous diseases claimed to be of syphilitic origin as tabes dorsalis, cerebrospinal lues, general paresis, etc., in which deafness is quite often a marked symptom. The change in the auditory nerve is analogous to that in the optic nerve in these diseases, and appropriate treatment to these diseases will suffice for the ear symptoms. Associated with cardiovascular changes, as general arteriosclerosis and chronic intestinal nephritis, one frequently encounters auditory nerve lesions. These are spoken of as apoplectifrom labyrinthitis, characterized by what was or is still known as Meniere's symptom complex such as dizziness, vertigo, nausea, deafness and marked tinnitus aurium. These symptoms are supposed to be due to minute hemorrhages into the labyrinth. Appropriate treatment to the general condition is indicated. Associated or following acute infectious diseases as grippe, diphtheria, typhoid, mumps, scarlet fever and other septic infections may occur a deafness that may be irreparable, by a neuritis. Chemical substances given as remedies as quinine,

arsenic, particularly salvarsan, are recorded as causing deafness or hardness of hearing by producing a toxic neuritis.

Alcohol and tobacco may cause hardness of hearing and deafness the same as they do blindness, by a toxic neuritis.

There are a number of cases of deafness reported following malarial fever, but in most of these cases large doses of quinine were administered and that may have caused the deafness.

In conclusion (Fig. 21), other types of ear conditions causing marked loss of hearing and deafness are the traumatic ones and those associated with surgical intracranial conditions as brain abscess, meningitis and brain tumors, especially at the pontine cerebellar region. In the former condition, namely, trauma, it is the fracture of the base of the skull through the petrous portion of the temporal bone that is responsible for the most frequent traumatic cause. During operations on the mastoid one may injure the horizontal semicircular canal or the cochlea or displace the stirrup and set up an infection in the labyrinth and thus produce complete deafness.

The treatment is usually expectant. In cases of deafness associated with or due to the surgical intra-cranial conditions it is their early treatment that may save the life of the nerve of hearing.

Having thus covered very superficially the most frequent and important cases of hardness of hearing and deafness with the suggestions of what is expected to be done it now remains for me to bring before you the main object of my paper, namely, the education of the public in these matters, particularly 1 as to the prevention of these troubles. 2 As to the possibilities of educating the hard of hearing and the deaf.

This means that a schema of a public lecture be prepared, with illustrations. Such a schema and illustrations shall then be furnished to any reputable physician and after his or her delivery of such a lecture either be returned to headquarters or forwarded to another lecturer as directed. Such propaganda would produce marked good and is nothing less than what the medical profession should do in this general movement of education in public health. These illustrations can be cut out, mounted and used in an opaque projectoscope considerably magnified.

Mr. Chairman, Ladies and Gentlemen: Consider yourselves now an audience of lay people and consider me a lecturer such as any of you would be; I do not intend to take up your time with a complete lecture, but would like to give some hints about the formulation of such a talk. It was my intention when I prepared this paper on the "Responsibility of the Medical Profession in the Management of the Hard of Hearing and the Deaf" that it would serve as a source of information to the lecturer and that he should form his own lecture for each individual occasion, but that he should adhere closely to the fundamental instructions to the public; that is the reason why so many commonplace terms are employed in this paper. A lecturer would start by making a general statement about the public health propaganda as advocated and enhanced by the American Medical Association, calling attention to some of the achievements by some of the committees, especially the general hygiene, pure food, drainage and sanitation of countries, and in the field of medicine, the conservation of vision committee, which has done noble work. Then lead on to the subject in question, namely, "Conservation of Hearing and the Education of the Deaf."

Tell them in plain language about the hearing and about the construction of the organ of hearing and demonstrate by lantern slides the points that were already made to you, telling in simple language the physiological action of each individual structure. It is well while demonstrating the anatomy and physiology to mention some practical points in the causation of a disease and its prevention or treatment. Having covered the anatomy and physiology you proceed to give some of the commonest causes of hardness of hearing and deafness, showing lantern slides as to their numbers and frequency and to their importance (Fig. 13). Then take them up one by one and go somewhat into detail as to their prevention and treatment (Figs. 17 and 27).

Finally tell them about the tremendous advance that is being made in the education of the deaf by what is known as lip reading, or better still, expression reading. That the old sign method of education of the deaf is rapidly being replaced by this newer and better method of ex-

pression reading, since these deaf individuals learn how to speak and when perfectly educated can often times not be distinguished from a normal hearing person. That in the cases of hard of hearing, especially if one gets the assurance from a physician that it is a condition that will probably progress and get worse or not improve, the individual should take up this expression reading, while still possessed of hearing sound, although not understanding the language. The reason for this is that they will associate sound and expression and thus will make much more progress than if they wait until completely deaf.

Tell of a group of hearing people conversing with a very hard of hearing or deaf individual in their midst and describe the dull, apathetic, morose, nervous, irritable, embarrassed expression on that individual. Then describe the same surroundings with a deaf or markedly hard of hearing individual, but who has been educated in expression and lip reading and note the absence of all the disagreeable expressions. Contrast deaf and dumb children before they are educated and after, and call attention to the happy faces of the latter. Give some statistics of how the educated deaf have found places in life which would have been absolutely impossible without training, and describe a group of such individuals at work. Then tell of public and private schools where such education is carried out. Give some idea as to the cost of such mode of education and close with an appeal so strong that as a result of your lecture you have started that particular community to thinking, talking and acting. Thus you and I will have done a little to advance this object of progress and civilization.

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PROGNOSIS AND TREATMENT OF DIABETES AS INFLUENCED BY RECENT STUDIES.*

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One of the joys to which I have looked forward for some time has been this visit to Ann Arbor. I shall do my best to bring before you tonight in a rambling way some of the newer tendencies in diabetic studies as viewed by the clinician. I shall certainly not attempt to discuss the overwhelmingly large literature on the subject; rather shall I gather under a few main headings certain phases of the subject in which I have been interested and on which I have worked.

From a clinical point of view diabetes is still as it has been for years, a disease probably pancreatic in origin, the therapy of which is limited to dietetics. Attempts at solving the mysteries of the disease have followed two main lines of research—that of pathological physiology into the ultimate cause and that of physiological chemistry into the intermediate metabolism. Studies on therapeutics have aimed at a fundamentally rational procedure based on the knowledge obtained in the research laboratories.

Except for the Von Noorden school who have contributed to the idea that most if not all of the ductless glands play a role in normal and pathological carbohydrate physiology, the tendency is certainly growing stronger toward the assumption of the pancreas as the sole etiological agent in diabetes. Despite Cecil's statistics on postmortem findings in human diabetes, the disease following pancreatectomy in dogs is so similar to diabetes in man that one is almost forced to think of the canine disease as a reproduction of human diabetes. Homan's studies on the analogies between the histological pictures presented by the pancreas in canine and in human diabetes when special histological technique is employed are striking to say the least, and correspond in full with Allen's studies on the same subject. Allen's success in producing a disease of any severity desired by mathematical reduction of the size of the pancreas, and likewise his success in treating human diabetes along lines identical with those followed in the disease in dogs, offers to my mind the most convincing proof yet established as to the identity of the disease following pancreatectomy in dogs and diabetes in man. Yet so far the final gap is not bridged, and the argument that one can not interpret animal experiments in terms of human disease is not fully answered.

From a chemical standpoint, the amount of work done on the theory of the disease is simply bewildering. The *Journal of Biological Chemistry* alone in 1914, 1915 and up to recently in 1916 has published more than thirty articles on

*Read before the Washtenaw County Medical Society at Ann Arbor, Mich., May 26, 1916.

the various phases of intermediate metabolism. Fascinating as are these studies and fundamentally important as are the results derived from them, we can not tonight devote much attention to them, first because an intelligent discussion of most of these contributions would carry us far from the subject selected; and secondly because as yet the clinic has not learned the practical lessons which must ultimately arise from the solution of these theoretical problems.

Problems of interest from every standpoint have arisen around the determination of blood-sugar. Formerly when such determinations involved the use of so much blood as to prevent repeated examinations, our knowledge of the subject was derived from isolated examinations. Normal values were not definitely understood, especially the wide variations reported by different observers, until technical improvements made consecutive study possible. Such technical opportunities are offered now by many methods. Bang proposed a micro-method in which the sugar was quantitatively determined in a few drops of blood; Lewis and Benedict, Schaffer, Kowarski, have all advocated methods easily applicable to the clinic. I have been working steadily with the Kowarski method with slight modifications, and I have obtained some results in normal and pathological conditions which are interesting and important.

As I now use the method the technique is exceedingly simple. Into an ordinary centrifuge tube is put 0.5 ccm. 0.2 per cent. sodium fluoride, 4 ccm. distilled water, and approximately a knife point of powdered Rochelle salts. This is taken to the bedside, and by means of a tuberculin or other well graduated syringe with a small caliber needle 0.5 ccm. blood is drawn from a convenient elbow vein and discharged into the centrifuge tube; making the total volume in the tube now 5 ccm. This is gently shaken, the albumin precipitated by the addition of 5 ccm. of dialyzed iron solution (Merck's Liquor Ferri oxydat. dialysat. 5 per cent.), the whole well shaken until homogeneous and then centrifuged. The sugar content on the clear supernatant fluid is determined by reduction of an alkaline copper sulphate solution to which has already been added a weighed amount of dextrose. This principle of adding dextrose reduces the percentage error, and is one of the most valuable parts of the procedure. The remainder of the technic follows Bertrand's method and need not be elaborated now. Those interested will find a complete description in a previous article. (*Bull. Johns Hopkins Hosp.*, June, 1915.)

The determination of an exact meaning for the normal in man was considered necessary in view of the wide variations published in the literature. In 1915 I published with Stein and Wiseley the results of a long series of studies, in which we defined a normal curve. It was shown that variations between 0.05 and 0.12 per cent. occurred and that these variations depended not only on the individual but on the time of day, and the carbohydrate content of the food. With healthy adults on an ordinary diet containing carbohydrate the daily blood sugar curve follows the same course and varies only in the height of the variations. The lowest value is obtained just before meals, and a post-prandial rise is observed one hour after meals containing carbohydrate.

The importance of noting all time relations with especial reference to food when making blood sugar determinations impresses itself on one when studying pathological blood. If in a normal person the upper level of blood sugar is obtained after ingestion of carbohydrate, it seemed obvious that the same factor will play a much more important role in the unstable carbohydrate metabolism of diabetes. By the same logic a mild diabetic might show a normal value when fasting. In a series of as yet unpublished observations on blood sugar in diabetes, attention was paid to the food and time factors. Our results so far are in striking contrast to the old dogma that successful therapy connotes the attainment of a normal blood sugar level. In our cases where consecutive study has been possible it has been demonstrated that except in the mildest cases of diabetes it has not been possible to maintain blood sugar at a normal level. Even under starvation treatment, as Allen and Joslin have stated, hyperglycemia persists. In some of my cases a temporary fall to normal was seen, to be followed immediately by a more or less marked hyperglycemia when carbohydrates were added to the diet. Usually, however, the hyperglycemia was less marked after treatment than before.

Blood sugar studies have been essentially valuable also in diagnosis, and although diagnosis is not the subject for discussion, a word on the

glycosurias of pregnancy may not be amiss. Lack of careful study of patients showing a reducing substance has confused and retarded the advance of better therapy. The glycosurias of pregnancy have been a clinical puzzle of some magnitude. Within recent days, thanks to blood sugar determinations, it has been shown by numerous investigators that most of these glycosurias are not associated with hyperglycemia, and are therefore probably renal in origin. The therapeutic and prognostic importance of such observations is at once apparent.

It is a long step from the "color guess" quantitative determinations of ketonuria through the simple determination of ammonia and the quantitative determination of urinary acetone bodies to a clinical method whereby the actual alkali starvation of blood plasms can be accurately measured. The theories of acidosis are still unsolved, but the work of Sellards on the urine, of Peabody and of Joslin on respiratory quotient, and particularly of Van Slyke on carbon dioxide reserve of the blood, have advanced our therapeutic possibilities tremendously. The latter method, dealing with simple apparatus, a small amount of blood and taking only about one-half hour for its accomplishment, strikes one as being most easily applicable to the clinic, and of being a most valuable, practical aid to both prognosis and treatment. Stillman has only recently reported on its use as a guide to the fasting treatment, and on the basis of his work divides diabetes into four main headings: 1. Those cases which maintain a normal Co_2 curve (mild); 2. Those which recover while fasting from acid intoxication, in some instances verging on a coma; 3. Those which show a constant low-grade acidosis, as indicated by subnormal Co_2 reserve, and increased NH_3 excretion; 4. Those which develop acidosis while fasting although previously no acidosis was evident. "When the degree of acidosis is determined daily by the method described, experience so far indicates that all cases of diabetes may be treated by the fasting method safely and with benefit."

These few notes on the technical simplicity with which the course of the disease, its treatment especially, may now be followed, are sufficient to carry us over the remainder of the work to the newest venture in diabetic therapy—Allen's starvation method. Joslin, one of the most enthusiastic supporters of Allen's work, writing in October, 1915, says, "The advance in the actual treatment of diabetes mellitus during the twelve months just passed has been greater than in any year since Rollo's time . . . and this improvement in treatment comes . . . as a result of patient scientific experimentation, which has been based upon the work of the foremost investigators in both laboratory and clinic."

Briefly summarized, Allen's method of treating diabetics rests on his experiments on depancreatized dogs in which he found that primary starvation and a continued low level of nutrition prolonged the life of the animals, whereas high caloric feeding sufficient to maintain nutrition was a sure method of increasing the severity of the symptoms. Allen had the courage to apply these principles to the human. He starves all patients until they are sugar free, then he slowly adds protein, fat and carbohydrate to the diet, never allowing glycosuria to return and never allowing the patient to reach his former level of metabolism. If sugar should reappear starvation is again resorted to—partial or complete—until the glycosuria again disappears. Acidosis is no contra-indication to the treatment; in fact this form of treatment seems to act best in the more severe cases.

Now the question is pertinent: wherein does this differ from previous methods? We all know of the "hunger days" of Naunyn, the "vegetable days" of Von Noorden; we know that Von Noorden advises complete starvation in the treatment of some cases of acidosis and diabetic coma; we know that some cases of diabetes made sugar from protein; that excessive fats might produce or intensify acidosis; but we used our knowledge only intensively in selected cases. We did not know that a diabetic would react to prolonged starvation by reduction of both glycosuria and acidosis, and the continued maintenance of a condition of under-nutrition is, as far as I know, a radical departure from current medical practice.

When we consider that a sure way of producing acidosis in a normal person is by starvation and under-nutrition it seems beyond conception that starvation and under-nutrition should produce such wonderfully good results as have been described. The thought behind this principle of treatment is the attainment of functional pan-

creatic rest. If the pancreas in diabetes is "overworked" we should relieve it, as we give rest to a diseased heart or to a gastric ulcer. To rest the pancreas we must eliminate all its activities, which would include its normal capacity for furnishing ferments for protein, fat and carbohydrate metabolism. Diabetes, especially in its later stages, is certainly more than a disturbance of carbohydrate metabolism, so that the differences between older methods of carbohydrate deprivation and Allen's of complete starvation may be really differences in degree rather than principle.

This principle of pancreatic rest is the fundament of Allen's method of treating diabetes, and should never be lost sight of during treatment. Clinical evidence of proper treatment of diabetes mellitus is obtained in the absence of glycosuria and acetonuria, and if this newer treatment permits such results it will have accomplished its end. Does it? My own experience with the method is broadening all the time, and the more I use it the more enthusiastic do I become, especially in the severe cases. In the mild cases of diabetes in which simple reduction of carbohydrate in the diet renders the urine sugar-free without producing an acetonuria, starvation I consider contraindicated for two reasons: 1. There is no need to employ drastic procedures where simple methods do the same work. 2. Starvation is not without dangers in such a person, who more nearly approaches the normal than the pathological. If starvation had any specific effect in raising carbohydrate tolerance it would be indicated even in the mildest cases, but no one has claimed any such effect.

But the milder cases should receive the benefit of a lower level of nutrition, and I have found it of advantage to treat such patients with a graduated food schedule. This beginning on Monday with merely eggs and vegetables ascends daily through the scale of increased carbohydrates to a maximum on Friday, Saturday and Sunday. This practice has several advantages, not the least of which is the psychic influence of greater expectations on the willingness to stick to a cure. Also the principle of *rest* is continuously carried out on the "Blue Monday," and one other principle is brought into use, namely, *gradual* addition of food. Although the literature does not emphasize particularly the importance of gradual changes in diet except in regard to the danger of producing coma by too sudden withdrawal of carbohydrate food, I have several times seen bad results from too sudden a dietetic change of any sort. During the period when Von Noorden's "oat-cure" was popular I saw several patients react to the gruel, with an increased excretion of acetone and sugar, whereas the same diet given later but *more gradually* was well borne. I have seen sugar appear from the sudden addition of an amount of protein which later gradually added to the diet was well borne; and we all have seen increased ketonuria from too sudden ingestion of fats. The reverse also holds true. Recently I saw in consultation a young lady aged 20, who on the day of my visit was passing one pound of dextrose and some acetone. Yielding to the wishes of her physician I ordered starvation—and got acidosis. The same patient later after food had gradually been reduced was starved with a brilliant result.

Insistence on the value of gradual changes in the diabetic dietary may seem disproportionate to its importance, but I am sure that much harm is done to diabetics by sudden changes. Formerly improper use of oat gruel, now improper application of the starvation method, not only may harm the patient but will certainly oppose a barrier of misunderstanding against the advance of better therapeutics. Especially important it seems to me is this principle of gradual changes in diet when one considers the high protein ratio still commonly given the diabetic. Patients are continually seen whose glycosuria the physician is unable to reduce merely because he has overwhelmed the organism with protein. This leads us somewhat out of order but logically to the question of protein in the diabetic dietary. The inability of the diabetic organism to utilize protein has been considered an index of severity, but I have often wondered whether it has not been rather an index of treatment. Most of the patients who make urinary sugar from protein in the food have been receiving a protein-high diet, and Allen's dogs well show the harmful effect of such a diet on the progress of the disease. One patient seen last summer throws light on this question. A girl, aged 9 years, having the first symptoms of diabetes about February, 1915, was not correctly diagnosed until July. At that time carbohydrate was removed from the

diet, and a large amount of meat was given. The glycosuria remained intense and when she arrived in Chicago in September a plain office specimen showed about 4 per cent. sugar. She was easily made sugar free, but it was soon apparent that the addition of even 10 gms. animal protein (fish, chicken or red meat) caused glycosuria. Egg and vegetable protein were utilized, but it was necessary to keep her on a meat-free diet for four months. In December tolerance for protein was again established, and now she is utilizing 75-90 gms. meat a day. Is this a case where proteolytic function of the pancreas was damaged by excessive use, and where rest finally restored functional activity? Only this month I saw a man who had been under treatment for four months, most of the time on a carbohydrate-free, protein-rich diet, with a constant glycosuria and almost constant ketonuria. There was much loss of weight, and it looked like a severe case. However, hospital care and starvation made him sugar-free in five days, and now he is progressively improving, gaining weight, sugar-free and acetone-free, and utilizing approximately 80 gms. protein, 70 gms. carbohydrate and 150 gms. fat daily. Surely this must be considered an example not of a necessarily severe diabetes, but as a diabetes being made severe by excessive protein intake.

Returning now to the Allen method of treatment, it is undoubtedly so well known that details of the technique are unnecessary. Certain rules may be pertinent. I doubt greatly the wisdom of placing all patients *immediately* on starvation, and I consider it advisable to place the patient first on the standard test diet containing known amounts of protein, carbohydrate and fat. In one or two days judgment as to the severity of the disease can be formed, and starvation can be more safely carried out than if the patient is starved without any knowledge of previous treatment. The severe cases with acetone, diacetic acid and sugar respond to starvation miraculously. Usually in from one to three days there is a complete disappearance of all urinary signs; occasionally an increasing acidosis warns one to give food, but most often in such cases subsequent starvation is better borne. The longest I have starved a patient is three days, and in only two instances was it necessary to repeat the performance. Others have starved patients for much longer periods. The proper addition of carbohydrate, fat and protein to the diet now requires the greatest care, and individual tolerance for each must be established. In one severe case a too sudden increase of 20 gms. butter caused glycosuria and marked acetonuria; in another, as mentioned above, sugar appeared whenever animal protein was added. One young woman remained sugar-free and acetone-free as long as her carbohydrate was confined to fruit and vegetables, but she could not tolerate any other form.

This method of treatment does not bring blood sugar to normal and does not immediately increase tolerance; but it does better than any other procedure I know put the patient in a position where he can live comfortably, and it practically puts an end to the dangers of diabetic coma. Since Allen's method has become the method of choice at the Michael Reese Hospital only one case of coma has come to my notice, and that was a patient of mine, a pregnant woman, whose idea of treatment was to eat whatever she wished and take the consequences. The consequences were a severe acidosis and a four-day fight against death. One patient was progressively weakened by the treatment. A 28-year-old man whose disease was of one year's duration and who had lost 35 pounds before coming to me could be made sugar-free only at the cost of so much weight and strength that he rebelled and I did not have the courage to proceed further. He left my care only slightly improved, and much weaker. In the light of subsequent experiences I feel that even he could have been greatly benefited had I persisted in treatment. This is the only patient I have seen in the past year who has not been made both sugar-free and acetone-free.

As regards ultimate results not much can be said as yet. Keeping the patient on a low level of nutrition, constantly avoiding ketonuria and glycosuria, seems to offer more hope of increasing tolerance than methods formerly employed. Of three children all are alive and all have a decidedly increased tolerance. One girl aged 20 who at first showed sugar from vegetables containing 5 per cent. carbohydrate, five months afterwards was able to handle in one day 75 gms. cooked oatmeal, 20 gms. bread, 30 gms. potato

and 20 gms. of vegetable and fruit carbohydrate. These patients when once freed of sugar are all treated in the manner already discussed under mild cases, and surely any increased tolerance is not due to the method of making them sugar-free, but to the *means* of keeping them so; which, if I may be permitted a reiteration, is synonymous with pancreatic rest.

Too much attention can not be paid to the details of the after-treatment. Until there is a general appreciation by the medical profession of the principles involved much reliance must be placed on intelligent co-operation by the patient. Usually the spectacular results obtained under treatment make the patient willing and eager to learn the game, and it is a simple matter to teach him how to use food tables and how to test urine for sugar and acetone. Careful explanation of all moves made while the patient is being treated, a copy of the diets from day to day, Joslin's little pink card, Atwater's tables and the means of figuring equivalents in food values usually suffice. A strict observance of the daily schedule as outlined; the removal of carbohydrates upon the appearance of glycosuria; periodic examinations of the urine by the physician; and an occasional return visit to retest tolerance give surprisingly good results even when local medical advice can not be obtained. The use of bicarbonate of soda as a routine has practically been discontinued, and in the more recent cases I have not hesitated to starve a patient without piling soda into his system. Alcohol still has its role, and during the starvation days especially the patients often find their highballs most gratifying. Exercise is begun as soon as the initial weakness from the starvation wears off, and later forms part of the patient's daily routine of life.

Before concluding, a few words on the interrelations between diabetes and surgery may be in order. I have just finished a study of the literature on this subject as well as an analysis of the records of the Michael Reese Hospital. Whether the surgical indication be caused by the diabetes or by some non-diabetic disease, all cases naturally group themselves into urgent surgical necessities or cases in whom operation may wait. In the former class of cases the best results can be hoped for only by most rigid surgery and post-operative dietetic care; but the second group offers a rare opportunity for team work between internist and surgeon. When the patient can wait for his operation he should be prepared, and the modern methods of handling diabetes promise not only good preparation but also tests for the potential dangers of the operation. The value of such preparation has abundant theoretical and statistical proof which can not be detailed now, except to say that prepared cases show a mortality about 50 per cent. less than untreated cases. But it is well to emphasize that exact information as to the status of operations on the diabetic can not be obtained except when such patients are under ideal standards of medical as well as surgical treatment.

To summarize this rambling discourse, allow me to refer to an unprejudiced analysis of the diabetic records of the Michael Reese Hospital. Such records being expressions of treatment by many men are not as scientifically valuable as those of a single observer (e. g., Joslin); but as indicating the trend of the times, as showing increased knowledge and better methods, they possess the value of representing group opinion. From 1899 to1907 there were 45 cases treated with a hospital death rate of 20 per cent., from 1908 to 1912 147 cases with a death rate of 23 per cent., from 1913 to 1915 102 with 17.6 per cent. deaths. So far in 1916 there have been about 55 cases with one death, and this includes at least 8 operations. The patient who died had a nephrectomy for an infected kidney and was half dead when admitted. Of course, in interpreting these figures we must remember that it is the fashion nowadays to send all diabetics to the hospital, which means that in the later years many more mild cases are included than in earlier times, when only the most severe entered the hospital. But to anyone actually seeing results there can be no doubt that at present lives are saved, that acidosis and other severe diabetic complications are becoming less common; and that these facts are not the results of chance, but are the effect of the influence of newer methods of study on treatment. I think we can fully agree with Joslin that never was the prognosis of the diabetic as favorable as it is now.

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THE RELATION OF THE ROENTGENOLOGIST TO THE PHYSICIAN AND SURGEON.*

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The present day attitude of the average physician and surgeon toward the roentgenologist is not what it should be. A careful consideration of the question will reveal to the fair minded medical practitioner that this statement is true and that an injustice is being done.

This attitude is out of keeping with the usual scientific atmosphere with which medical work of the better order is associated, and often is unethical, as will be shown. Most physicians are not wilful in this unfairness, and when their thoughts are directed to the proposition they will see that they have had a wrong viewpoint, though only through faulty precedents already established.

In this presentation a definite distinction is made between the so-called "x-ray expert," who in many instances is a non-medical man, the possessor of an x-ray machine who makes x-ray "pictures" without further intent, and the "roentgenologist," who, when properly qualified and experienced, is entitled to the same high standing in medical and surgical circles as is accorded the pathologist, the internist and others doing a special branch of medical work. In the strictest sense he is a consultant in diagnosis and his work should be so considered. It is unfair to regard the competent roentgenologist as one who makes x-ray "pictures or photographs." On one hand we have the x-ray man, whose job and sole aim in life is to make "x-ray pictures" for a fee (usually at cut prices), his effort reaching no farther than the mere mechanical process of exposing and developing "pictures" according to order, one view of this or two of that; on the other hand is the roentgenologist with whom the making of plates is not the primary object at all, but who views each case that has been sent to him in the same light that any reputable physician would a patient who seeks medical or surgical advice. He is not concerned in x-ray "picture-taking," excepting only as the roentgenograms will reveal certain pathological lesions by more or less characteristic shadows. He considers these shadows in his study of the case along with the history, the symptomatology, the physical signs, the pathology and other aspects that may bear on the case. In this way only is it possible to obtain the full value of an x-ray examination. Anything short of such a study is incompetent and of little value and will often lead to faulty conclusions.

It does not follow, as is often supposed, that every one owning or manipulating an x-ray machine is a roentgenologist, even though he has learned to make beautiful pictures of this, that or the other part of the human anatomy. After purchasing an x-ray equipment many a physician feels that all he has to do is to turn out the pictures. The sales agent is often his only instructor. One should remember that x-ray diagnosis is not such a simple problem.

Nor does the term roentgenologist mean the man who has taken a so-called "course" in an x-ray clinic, even though under a competent roentgenologist. A roentgenologist is not made in two weeks or two months. Too often do physicians pass through this superficial preparation and then send out nicely printed circulars beseeching the medical profession to send them their patients requiring x-ray examination. Inducements are offered in some instances by a cut-price list of fees varying from 50 cents to $3.75 per plate. (No rates are noted for dozen lots, but undoubtedly a reduction is made for such quantities). Such men are not roentgenologists in the true sense. Their incompetence makes it necessary to attract the regular physician or dentist by offering the inducement of a cheap price list. They seem to forget the dignity of their professional degree by lowering themselves to become mere picture takers. The doctor who sends his patients to the cheap x-ray laboratory is cheating both himself and his patient, because neither one is getting proper x-ray value. We hear much in condemnation of the physician who peddles his surgical patients to the operator where the operation is performed the cheapest, but there are few who realize that in x-ray work there is a parallel condition.

There are many physicians who send their patients to the "International X-Ray Laboratory," even though Dr. Blank, the director, can-

*Read before West Side Branch, Chicago Medical Society, May, 1916.

not distinguish the shadows of normal structures and conditions, to say nothing of pathological changes; the question of skill in interpretation, of large experience, medical ability or pathological knowledge does not enter the doctor's mind when deciding to whom to send his patient for x-ray examination. These seem to be items of no importance with many and shows how little they regard the aid of the x-ray in diagnosis or else indicates their lack of knowledge of its real value.

As for the "x-ray picture takers," one can but say that it is a pity that they have not found their proper commercial sphere as "photo-gallery artists." The medical man who lowers himself to such actions does not deserve to be considered in good standing. It is sad but true that many of the so-called x-ray "directors" are unsuccessful physicians who have failed in regular legitimate practice. The quack x-ray physician is as much a reality as is the quack doctor and the quack dentist. Unfortunately there are no laws to protect unsuspecting patients from being sent to such as these. Even after many years of sad occurrences due to x-ray over-exposure in making plates, faulty manipulation of x-tubes, incorrect diagnosis, etc., there is nothing to prevent any Tom, Dick and Harry, with or without a medical degree and no special x-ray training, who may have the price of an x-ray machine, from applying this powerful physical force to any human being who comes to them in ignorance of the danger and risk involved. What the result will be from massive dosage with the new powerful Coolidge tube is hard to contemplate. Will the doctor refer his wife or his children to such a one? Then why send his patients there?

The term "roentgenologist" implies not only a special technical knowledge of x-ray in its various applications in diagnosis and treatment, but a thorough knowledge of the gross and the minute anatomy of the body. This does not mean a mere general knowledge of osteology nor the ability to name the several bones of the body, but myology, syndesmology, the arterial, venous and nervous systems as well as the anatomical relations of the individual organs. If one is not thoroughly grounded in these subjects he will not be able to distinguish the normal structures revealed on the roentgenograms, and if he cannot do this, how can he give information in cases of abnormal conditions? It follows that he will not be able to connect the x-ray shadows with the probable pathological condition present. It follows that a thorough knowledge of pathology is a vital necessity to the competent roentgenologist, in the absence of which it would be useless to attempt to render an intelligent interpretation that would be worth anything to doctor and patient.

Of great importance also is a knowledge of the physiology of the various organs and tissues of the body. How can one detect a pathological stomach when he does not know the physiology as well as the x-ray appearance of the normal one? Would any thinking physician send one of his patients to the "Cosmopolitan X-Ray Laboratory" for an x-ray examination of the chest of a case in which he suspected an incipient pulmonary tuberculosis, if the director of the laboratory was not acquainted with the normal pulmonary shadows? Would a well informed otologist refer a mastoid case to the x-ray physician who calls the shadow of the temporo-maxillary articulation the semi-circular canals of the ear? Can any value be placed on the findings of the man who calls the shadow of the lower angle of the liver the gall bladder? How many of these x-ray photographers can be relied upon to give accurate information as to the lesion indicated by an abnormal heart shadow? What laryngologist would operate in a case of suspected chicken bone in the throat, in which the x-ray operator calls the hyoid bone the foreign body? And there are many x-ray picture-takers who cannot even distinguish between a fracture and an epiphyseal line. Yet these and many other blunders are committed daily by the incompetent x-ray man.

It is evident that the average medical man fails to distinguish between x-ray pictures and x-ray diagnoses. To him the one who takes the prettiest photograph is the best x-ray man, regardless of the medical skill, experience and ability back of the examination. How many of the so-called x-ray experts consider the history of a given case, or the symptomatology or the physical findings when reading or interpreting roentgenograms? To them it matters little what the stethoscope or the pleximeter reveals, nor does the gastric analysis, the blood findings or fecal examination bother them in the least in their

picture taking endeavors. And yet these are items of great importance in x-ray work and the man who does not include them in his interpretation will err in his findings. Each additional error through such incomplete work brings discredit to the x-ray and often is charged against the method instead of against the picture taker.

Thus we find that many physicians are judging photographic ability rather than medical skill when they send their patients to the man who makes the most beautiful x-plates. Yet we know that the finest plate may give no more information than one less brilliantly made. Often the x-ray "artist" does not know what is indicated by his fine plate, whereas, a competent roentgenologist will give infinitely more value to the doctor and patient by his ability to read even a poorly made plate. Doctors often say, "that is a poor plate, I can't see anything on it; you'll have to do it over again." What an absurdity! The doctor, with few exceptions, is not a proper judge of how good or how bad a plate is, from a diagnostic viewpoint. The question to be asked and answered is, "Does this plate give us all the information possible by the x-ray method?" The careful x-ray examiner will consider it his duty to re-examine cases in which the plates fail to be sufficient to give the information desired. Recently a few x-plates were brought to the writer for interpretation; these plates were made by a cut-price x-ray man who should be censored by the profession for delivering such outrageously poor work. The plates were so black with overexposure that it was almost impossible to determine even the region examined, although the esophagus was in question. Strictly speaking, the patient's money was taken under false pretenses, the doctor's time was wasted, and absolutely nothing was gained. A good roentgenologist would have known that these plates were failures and would have made good plates before he considered his work properly done. The patient later was sent to a competent roentgenologist who found the patient had a Zenker's diverticulum.

To the clear thinking physician it will be apparent that with few exceptions a non-medical man is not qualified to become a true roentgenologist; he is at best an x-ray technician or an x-ray operator.

The x-ray physician who has resorted to cut prices as a means of getting business is manifestly a medical incompetent, else it would not be necessary for him to stoop so low as to grovel in such rank commercialism as to peddle x-ray pictures at $1.50 per. Cheap prices are not consistent with high grade medical and surgical work, of which x-ray diagnosis is a part. And yet many hospitals are setting fees in accordance with the material used, not with the slightest consideration for the skill of the roentgenologist or the value of his interpretation as a diagnostic aid. The work done in some hospitals is not worth even the low fee charged, as can be seen by worthless gastro-intestinal examinations so frequent of late.

For reasons following, the term x-ray "picture" should be avoided by every physician and surgeon. To speak of x-ray "pictures" before a patient serves to make him think that he is going to get a picture made in the same manner as he gets a dozen photographs. This is an erroneous impression; he does not buy a picture, but pays for an x-ray examination, which is no more or less than a special medical consultation. The proper term for the plate is "roentgenogram," not "radiograph," "skiagraph," "roentgenograph" (all of which are verbs, not nouns), or any of the other incorrect terms in use today. If the scientific word "roentgenogram" be too difficult for the scientific physician and surgeon to pronounce, one could say "x-ray plate." This is a better word and one avoids the term "x-ray picture."

Another item of importance to the referring physician is the fact that the roentgenograms are the property of the x-ray physician who made them, and not, as is so often believed, the property of the patient. This question has been decided in many courts of law in which the question of ownership of the x-ray plates has come up. It also frequently happens that a patient refuses to pay for his examination until he gets his pictures; in this instance one finds it necessary to explain that it is special medical advice that they are paying for and getting, not pictures.

A full detailed report should be made to the doctor who referred the case, with diagrams or other explanations.

It is a mistake to give a patient his or her x-plates. It is wrong to give them any plates whatsoever, or even prints of them, for it can

result in no good either to the patient or the doctor who has sent the case. Let us see what happens when a patient takes his "x-ray picture" home; his neighbors drop in and are shown the x-ray plate; one of his visitors once had an x-ray examination made. His doctor did so and so and cured him, which happens to be different from the present treatment; other friends give him several different kinds of advice, with the result that he becomes dissatisfied with his doctor and the latter loses his patient; or, in another instance the x-plate is taken to some other doctor, who gives still another interpretation, even though he may know but little about x-ray shadows and their indications. What possible good can result from such events?

Another unfair attitude that is more or less frequent is the sending of a patient to a cheap x-ray laboratory, obtaining the plates, and then, because the interpretation may not be worth the paper that it is written on, the doctor seeks a competent roentgenologist to ask him to tell what the plates indicate. This constitutes a "thank you" case and, although it is no more or less than a medical consultation, of the same nature as is a bedside consultation, the doctor does not even offer to have the patient remit the usual consultation fee. When one stops to think, he will realize that the x-ray diagnosis is the thing that the patient needs, not "pictures," as such and he will see how unjust this proceeding is to the roentgenologist whose opinion is asked. If the physician will put himself in the roentgenologist's place he will see the injustice of this act.

It is also unfair to the roentgenologist for the physician to send in a patient after telling the man that the charge would only be a certain amount, usually naming a low figure. Because the charge in a wrist examination made in a previous case was a certain amount, it does not follow that an elbow, a hip, a head or a gastro-intestinal examination is also the same figure. Patients are too frequently thus instructed by their physician, and when the roentgenologist informs him that the charge is twice or even several times the amount as the case happens to be, there is difficulty in convincing the patient that his doctor was in error. The patient naturally feels that he is being held up and overcharged. It would be just as fair if the roentgenologist were to send the patient to that same surgeon for an appendectomy, after telling him that the surgeon would only charge him twenty dollars for the operation. Then, when the patient gets the surgeon's bill for $150 or $200, he refuses to pay more than the $20 that the roentgenologist told him the fee would be. Naturally the surgeon is indignant and asks by what right the roentgenologist placed a twenty dollar value on his—the surgeon's—services without even consulting him in the matter. This illustrates exactly what many physicians and surgeons are doing to the roentgenologist today. Is there any justice in such an attitude? Is it even fair to the patient?

Still another proceeding on the part of many physicians is the sending of a patient for "two views" of this or that part, or "one picture" of such a region. A competent roentgenologist needs no such instruction, and to do so is to infer that he does not know his work. It is an error to judge any case as needing only one, two or so many given plates in a given case. The roentgenologist is the best judge of how many plates he needs to get the full value of the examination. It may be necessary to make as many as twenty-four plates or more in one case and but one plate in another, but the referring physician should not put a limit on the number of plates to be used any more than he would dictate to the pathologist the number of slides he must make in examining a tissue or fluid, or to instruct the surgeon to make just two incisions in breast amputation.

In summing up the matter presented in this communication the following items are offered in conclusion:

1. An x-ray examination is special medical work; the object in view is the diagnosis, not x-ray pictures.

2. The roentgenologist is a medical consultant in each and every case referred to him, and his fee should be in accordance with the skill required in the case, not the number of views or plates.

3. An x-ray diagnosis is of value only when the shadows obtained are correlated with the history, symptoms, clinical findings, etc.

4. X-ray examinations and treatments should only be performed by regularly qualified medical men who have had special training and experience in the work.

5. The ability to make photographically

pretty roentgenograms should not be the principal point in judging the roentgenologist; the real factor is skill in interpretation and medical ability.

6. In addressing his patient the doctor should not speak of x-ray "pictures," but should use the term "x-ray examination," thus avoiding the idea that pictures are to be obtained by the patient.

7. X-ray laboratories with high-sounding names are often run by directors who are incompetent as roentgenologists, and many hospital x-ray departments are in charge of inexperienced internes, non-medical men with practically no training, sisters, et al. This should be considered in judging the value of the work done.

8. Opinions asked of the roentgenologist on roentgenograms made by someone else are medical consultations, and he should receive proper compensation for the service rendered.

9. Patients should not be given any plates or prints, but should be advised that they are paying for an x-ray diagnosis, not pictures.

10. Finally, every physician and surgeon should give that consideration for the work and opinions of the roentgenologist that he expects for his own.

The hope is expressed that the exposition of these conditions will result in a better understanding of the relation of the roentgenologist to the physician and surgeon, and that a closer coöperation will bring about a higher percentage of correct diagnoses through the better team work that will follow.

CHRONIC ETHMOIDITIS AND ITS TREATMENT.*

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The aim of this paper is to give a general review of chronic ethmoid trouble rather than an extended description of some one type, so that we can be on our guard against a focal infection located in this region, and look for it as earnestly as we do those of the tonsil or teeth, but, owing to the hidden situation of these cells, we must investigate even more carefully, since many of the cases are very obscure, not only in their history, but also in the local findings.

There are various classifications of ethmoid involvement, but the simple division of these cases without pus present and those with pus gives the two distinct types. The first or the chronic catarrhal inflammatory form is also termed the hyperplastic type of ethmoiditis, and here we have certain symptoms and signs which at least warrant a careful nasal examination. Prominent among these symptoms are the following:

In the earlier stages a chronic coryza, nose running, sneezing, patients often state that they are continually catching cold upon slight exposure. Later, the headache appears, and in most of the cases is described as a distress rather than a severe pain. It is located at the base of the nose, between the eyes, extending backward and radiating to the temporal region, and over the top of the head. The sensation experienced is one of stuffiness or fullness, with a feeling of pressure, generally deeply seated between the eyes, but may be felt as though behind them. Occasionally, it is stated that the pain becomes extremely intense. The ethmoid headache is not influenced by stooping or jarring, as in the frontal, which is well to remember when differentiating from frontal trouble, but the fullness and pressure sensation experienced is intensified in the suppurative type when the head is held downward, if only for a few moments. It is not influenced by fatigue, or only slightly, and as far as I can determine there is no marked periodicity as is shown by the frontal. The secretion blown out is often clear and watery. This becomes purulent when an acute attack occurs, and upon inspection a thick, sticky, muco-pus is seen on and between the polypi. Here we are dealing with a hyperplastic type plus an infection, but differing from the true suppurative ethmoiditis. Owing to the occlusion of the olfactory space due to the presence of polypi, various conditions arise. Generally the sense of smell is wanting, and in this type is due to a mechanical blockage. They also complain of a subjective unpleasant odor due to stagnation of the secretions held back by the large polypoid masses. With this is associated a very unpleasant taste, most noticeable in the morning. Granular pharyngitis is generally present, and as a bronchial complication the well-known asthma, which in a number of the cases is absolutely relieved following the ethmoid exenteration.

The histories of these cases are extremely in-

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teresting, with their almost instant cure after years of suffering.

In my own experience, the severest asthma cases and those giving the most surprising results have been in the suppurative class, and the universal history in these cases has been that medication and change of climate have had no effect, with the exception that a vaccine from bronchial secretion has for a time given an improvement.

These cases also give another point in common, which is termed by them "catching cold." Every little while they have a marked increase in all symptoms, which is probably not a cold, although resembling one, but a more active process in the area already involved, due to some external stimulation or perhaps to a lowered resistance. Asthmas with ethmoid infections present, I believe, are often due to a toxemia, with the ethmoid cells as the focus, and should be treated accordingly.

Having mentioned some of the diagnostic points of hyperplastic ethmoiditis, it might be well to consider the suppurative type by comparison. It is often stated that an ethmoid infection is associated with, and often caused by, some other sinus involvement, especially the frontal, and although that is doubtless true, nevertheless we have ethmoid disease without the involvement of other sinuses, and one of the interesting pictures that I have seen in my work in this region is the clean sphenoid with suppuration in the posterior ethmoidal cells, and the associated occipital headache which we have always considered an evidence of sphenoidal disease. It may be that an associated congestion of the sphenoid is present, due to pus in the immediate neighborhood, and that that is a causative factor, but the fact remains that inability to concentrate and occipital headaches are present in a considerable number of cases with clean sphenoids, but with pus in the posterior ethmoids.

The headache is a variable factor, since with drainage present it may be an almost negative condition, but when the pus is closed in, it may become intensely diffuse. Commonly, it is located, as in the catarrhal type, but, as stated, often extending to the neck and occiput. Here we have crusting and increased secretion, both in nose and naso-pharynx, with much secretion in a hypersensitive pharynx, a granular pharyngitis, and a hacking cough, which is very commonly rendered more acute by changing weather. In fact, patients claim to be weather prophets, since with a change to cool, damp days the scrapy, raw throat, with increased secretion, immediately appears. At these times the throats are markedly increased in their red granular appearance, with much muco-purulent secretion on the posterior pharyngeal wall. The throat symptoms are important, since for them the patient seeks relief, and by judicious treating relief is obtained, but the nearest approach to a cure lies in operative procedures.

Associated conditions that could result from absorption may be present, depending upon the virulence of the organism, the character of the drainage, whether free or otherwise, the resistance of the patient, and so forth. In rheumatism, in various ocular manifestations, as iritis, in vague neuroses with any nasal history, an ethmoid examination is indicated.

The x-ray plates as an aid have not been of definite value in the cases that I have had, and I believe that to be the consensus of opinion among other men. Recently the position of the head has been changed and this may be of some benefit. Formerly the forehead and nose touched the plate (Caldwell's position), but by placing the chin and nose in that relation (Water's position), the posterior ethmoids are shown in the maxillary sinus and the alignment of cells anteriorly is much clearer. In one plate shown tonight the cells appear normal, but upon operation pure macroscopic pus was found in cells markedly necrotic.

In obscure cases the previous history may be of value. Not uncommonly the patients state, but only when questioned, that years ago, perhaps in childhood, they had a bad nasal catarrh which bothered them for years, even stating that odor was present, with a heavy, nasty secretion, hard to blow out of the nose. Here, doubtless, was some form of sinus disease which, in the course of time, became less annoying, but probably was the starting-point of some chronic trouble. Polypi may be present, large or small, but may be so hidden that upon examination they are not seen. In the true hyperplastic type we do not feel that they must be present in order to make a diagnosis, but I believe the diagnosis is surer if they are found, even though very

small, but in the same form, with suppuration, polypi are generally present and easily seen, although not always so. This brings us to the cause and effect of nasal polypi, a much debated question, and which is best settled by allowing both sides to win, since it is true that suppuration of the ethmoids does cause polypi, and also is it equally true that blockage from polypi by damming back secretion allows it to become infected and hence a suppurative ethmoiditis results from polypi being present, and not from the suppuration *per se*.

Having obtained a history of our case, the next and most important procedure is a nasal and sinus examination. This must be done carefully and exhaustively, for it is only by careful scrutiny in those cases designated as the small polypi cases, or those where true polypi are not present, that a correct diagnosis is possible. In these cases I prefer to make the examination in the hospital. Should we find at this time that our suspicions are confirmed, we are in a position to clean out the ethmoids without further delay. The main points to be observed in this diagnostic work are as follows:

1. Complete local anesthesia, best obtained by rubbing the areas with adrenalin-wet cotton, after being held in cocaine powder, so that almost the pure powder is rubbed on the surface.

2. Careful inspection following this very decided contraction.

3. Irrigate maxillary sinuses in order to eliminate them as a possible source of infection.

4. Thoroughly clean and dry entire nasal cavity, in order to determine where the pus comes from, should it appear following the next step.

5. Fracture middle turbinate, so as to give view along and underneath its outer side, and after bending it away from septum, a view between it and the septum, to or into the sphenoidal sinus. I often use a long Killian speculum for this procedure, or a flat dissector may give sufficient leverage to force the middle turbinate aside. Resultant upon this, we are able to determine if pus appears, if polypi are present in some of the hidden recesses of the nose, even though they may be only bead-like in size, if by probing we have denuded bone, or a polypoid degeneration of the tissue now under inspection. By this means we determine whether the anterior or posterior group of cells, or both, are involved, and plan the operation accordingly. A complete or a posterior ethmoid exenteration is best done by a preliminary removal of the middle turbinate; however, the anterior cells can be cleaned out without more than fracturing the middle. This, I believe, can be most advantageously done by means of the curet, cleaning cell by cell until all granulations and necrotic bone are removed, being guided by careful inspection given by frequent drying and also by the feel of the curet against the firm outer wall of bone. I cannot emphasize too emphatically that the greatest care should be used that the curet work away from the cribriform plate, that we should never forget that what feels like granulation tissue may be a soft necrotic outer wall, and that when in doubt it is far better to leave in diseased tissue than to be too thorough. When we remember that the lymphatics of the upper nose can be injected from the subdural space, and that we are working in a region of longstanding suppuration, where, owing to the extensive necrosis, it is impossible to state how complete is the bony wall separating the operative field from the meninges, it becomes evident that more than mere cleaning out is necessary. The diseased condition must be relieved, but the "Safety First" motto must be ever present.

6. The sixth and last point in the treatment is that concerning the after-care, which is a subject in itself, and can only be mentioned here. In the suppurative cases the best results are obtained by an occasional inspection extending over several months, using various means in our endeavor to give a healthy field.

25 E. Washington Street.

CO-OPERATION BETWEEN THE COUNTY MEDICAL SOCIETIES AND THE STATE BOARD OF HEALTH FOR THE GOOD OF THE COMMONWEALTH.*

C. St. Clair Drake, M. D.,
Secretary of the Illinois State Board of Health.
SPRINGFIELD, ILL.

It is not necessary for me to remind you of the necessity of cordial co-operation between the

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members of the medical profession and the public health official for the purpose of obtaining the highest degree of efficiency in the protection of the lives and health of the people. It is true that the health officer has behind him the public health statutes enacted by the legislature, the observance of which is mandatory upon physicians and laymen alike. It is true that the health officer may, if he chooses, secure the observance of health regulations by prosecution or by force. It is likewise true that no laws are productive of salutary results if such laws be in advance of or opposed to general public sentiment. The maximum of official efficiency is only reached through the enforcement of reasonable and fairly popular laws which are made acceptable to the people by education and a strong appeal to public spiritedness.

The family physician has been the guide and mentor of his people in matters of health for generations. The example of the family physician cheerfully observing health laws and co-operating with the officer whose duty it is to enforce such laws, is a powerful force in producing a law-abiding general public.

Without such co-operation, the effectiveness of health legislation is reduced to the minimum and the work of the State Board of Health and of the local health authorities is made difficult and unpleasant;—unpleasant not only to the responsible administering officers, but also to the medical profession and to the public. As an illustration of this, you may recall the quarantines of communicable disease in which, on the one hand, there has been a spirit of friendly co-operation and in which friction has been almost, if not entirely, absent. On the other hand, you will recall the quarantine in which the relationship of health officer and physician has been marked by bitter antagonism. And you will recall that in the former quarantine there was a much higher degree of efficiency and a much more complete conservation of the safety of the public.

I think that we overlook the fact at times that physician and health officer are working to one and the same end;—the suppression and prevention of diseases. Forgetting this, the physician, jealous of his own liberty and rights, may suspect that the health officer is too ready to employ the authority which the law has unquestionably given him. On the other hand, the health officer may at times suspect that the physician is disposed to assume rights which are not his and to ignore the legal authority. If we can forego these petty differences;—if we can center our attention on the real and important thing to be attained;—if physician and health officer will only strive to know one another better, a spirit of co-operation can be created which will bring enormous benefits to the people as a whole.

In bringing about this mutual understanding and co-operation between the State Board of Health and the thousands of physicians of Illinois, it seems wise to utilize the excellent machinery which has already been created and the secretaries of the various county medical societies appear to be the proper and logical means of reaching the physicians of their several communities. Likewise, it seems to me that the secretaries of the county societies should be the ones to reach the State Board of Health in expressing the views, the opinions and the wishes of the men who make up their societies.

Within the past two years the State Board of Health has had occasion to appeal to the county medical societies on several matters of importance and always with good results and that experience has impressed the Board with the possibilities of co-operation for the future. And this co-operation, it is anticipated, will go much further than the field of the physician engaged in following his calling;—it will extend to the physician engaged in all branches of the great field embraced in social and civic betterment.

Within recent years there has been awakened what one may term a broad civic conscience. Men and women of prominence are engaging more and more in the improvement of living conditions of their communities and most important among these living conditions are those things which have to do with the health of the people. This social and civic movement is making a strong call for the services of public-spirited physicians and the medical profession cannot do better than to take an active and conspicuous part in such a movement. To do so will bring benefit to the public; will reflect credit upon the profession and will bring definite and legitimate benefits to the individual himself.

It is perfectly natural that the public should hold in higher esteem the physician who lends his efforts to the prevention of disease, who is a leader

in movements to safeguard the public health and thus assure a greater degree of happiness and prosperity to the community, than it holds the physician who is indifferent to such endeavor.

In this day and age, when the public press is devoting much space in its news and editorial columns to the discussion of public health protection and the means of its accomplishment; when our newspapers are teeming with advice and information on how to avoid preventable disease and unnecessary sickness, and the people everywhere are thus brought to realize the great possibilities and responsibilities of the medical men, it must be evident to all of you that the doctor of today must be more than a practitioner of curative medicine;—that he must be a practitioner of preventive medicine and a promoter of protective sanitary projects.

The public is rapidly being educated to the newer order of things and the time is now at hand for the members of the medical profession to adjust themselves accordingly. Those who do so early will, undoubtedly, experience material personal benefits such as come with a wider public knowledge of a man's real worth to the community which he seeks to serve.

The Illinois State Board of Health is in a position to assist the medical profession in its entry into this wider field of community or public welfare endeavor and it is our aim to encourage the profession to take the initiative in such movements rather than to leave it to citizen or lay organizations;—organizations which spring into existence by reason of a lack of action on the part of those who naturally should take the lead in such movements.

Mind you, I am not saying that lay organizations should not be taken into consideration in community welfare movements. They are a very necessary part and a quite indispensible factor in the success of undertakings of this character. I do wish to emphasize, however, that the organized medical profession of every community should originate and set in action all movements in which community health is a major consideration.

The local medical profession should give public evidence of deep interest and should be prepared to offer counsel and advice to the constituted authorities and to the people on such community problems as water supplies, sewage disposal, garbage disposal, ventilation and sanitation of school houses and other buildings, drainage and street cleaning. In all such problems the State Board of Health can be of assistance to you and upon request, we shall be pleased to send our expert sanitary engineers to study the local situation and to counsel and direct you in their proper solution without cost to your community.

The medical profession is also looked to for advice and guidance in the solution of the greatest of all community problems—the control and elimination of communicable diseases.

In lending yourselves to the solving of this problem, you must deal more with the people than with the community authorities. You must resort to popular education for, in the final analysis, education is the 85 per cent. effective weapon in the prevention of preventable disease.

Impress upon the people the facts that more than half the sickness of their community is unnecessary and that fifty out of every hundred deaths are untimely and avoidable and you will develop a desire for information and a disposition to put this information to practical use.

The medical profession should take the leading part in the health education propaganda. At the present time, they are doing relatively little, leaving it to the public health bodies and lay organizations. It has been stated that, in the great nation-wide movement now being waged against tuberculosis, that perhaps ninety per cent. of the effective work is being done by laymen.

The Illinois State Board of Health would like to interest the medical profession in this great work and the Board feels that the best way to accomplish this is through the agency of the various county medical societies.

Through the secretaries of the county societies, the Board offers to place its educational material at the disposal of the profession. Our exhibits, literature, lecture outfits, motion pictures, stereopticon slides, etc., are at your service and we earnestly invite you to make use of any part or all of this material.

We especially desire to develop a large corps of public health speakers, at least three or four in every county in the state, and, in order to encourage physicians to undertake this work, we are now creating a lecture library service, em-

bracing prepared talks on all health topics and a lantern slide and motion picture loan service. Entertaining and instructive talks in typed form, many illustrated with a selected series of lantern slides and a few with motion pictures, will be supplied on request and without cost. This service will permit the busy practitioner to engage in this important and attractive work with the least possible trouble and with little or no expense to himself.

Our publications are always at the disposal of the physicians of the state for distribution among their patients and it has occurred to us that, as a means of encouraging in this way, it would be wise to issue supplies of these publications to the various county secretaries, thus making them readily obtainable by the local profession. Our booklets on the care of the baby, tuberculosis, the handling of contagious diseases, the fly menace and the mosquito nuisance will be found acceptable by physicians and laymen alike.

At the present time, many physicians over the state carry supplies of this literature for distribution and we are impressed with the great advantage of having our literature passed to the public in this way. Incidentally, it occurs to us that there must be some advantage to the local society in having the physicians come to them for supplies.

As many of you know, we also publish a monthly publication under the title of the "Illinois Health News," written in popular style, devoid of technicality, the chief purpose of which is the education of the laity in health matters. We shall be pleased to send the "Health News" to such of your fellow townsmen as you may desire to have included in our mailing lists.

In each number of the "Health News" we have run two cartoons setting forth public health truths in an impressive and forceful way. Pictures often deliver their lesson where type fails to be effective. To give these cartoons a wider value, we shall be very glad to loan the plates to the secretaries of county medical societies for use in the bulletins of the local societies or for publication in the local newspapers.

Incidentally, in preparing material for the local newspapers in the campaigns of education which medical societies are now engaged in or may be engaged in in the future, we want you to feel free to draw upon any of the material contained in any of our publications and to use it as freely as though it were your own.

Our public health exhibit,—consisting of numerous mechanical devices, still models, posters and practical demonstrations,—is in great demand by county fairs and chautauquas and for such events as "Health Weeks", "Baby Weeks" and "Community Betterment Exhibits". We loan this exhibit to those who agree to defray the cost of transportation and operation, the Board having no funds to meet such expenses. We prefer to book the engagements for this exhibit through the agency of the county societies and to have it generally understood that it is being shown under the auspices of the society. Experience establishes the fact that wherever this arrangement is made, the society gets favorable notice in the local newspapers and in this way there accrues to the society that profit which comes with public knowledge of its enterprise and public spiritedness.

In addition to this elaborate exhibit, we have a parcel post health exhibit, consisting of a series of colored posters, which we shall be glad to loan you at any time and without expense to you.

As these exhibits are much in demand and the supply limited, it is necessary, in order to avoid disappointment, to make your engagements well in advance of the date desired.

Doubtless some of you, within my hearing, have actual knowledge of the intense interest which a baby health conference or a better babies contest arouses in a community. Those of you who have had actual experience with these contests also know that, when properly conducted along scientific lines, they are events productive of great benefits not only to mothers and the children participating in them, but also to the medical profession of the community in which they are held.

Give a mother a score card showing the defects found in her child after careful and exhaustive examination and you may be sure that she is going to consult the family physician with a view to the correction of those defects. Thus the child is benefited, the mother becomes more intelligently interested and, incidentally, the family physician is not the loser.

Quite recently I have had the opportunity to personally observe the conduct and outcome of a

number of these contests and in all instances, where they were properly conducted, I can truthfully say that they have been productive of a larger measure of benefit than any of the many kinds of infant welfare movements with which I have had experience.

Perhaps the best testimony to the success of these events is the fact that wherever one is held there is a unanimity of opinion that they should become annual events, and the physicians themselves are the most enthusiastic supporters of this idea. Therefore, I say that the county medical societies may well consider the adoption of contests or conferences of this character as a feature of their year's program and as a contribution to the welfare of the baby citizens of their respective counties.

For the purpose of furthering work of this character, the State Board of Health is prepared to furnish detailed instructions on how to organize and conduct a baby health conference and it will supply, without cost, such necessary supplies as score cards, anthropometric tables, certificates of examination and so on.

Incidentally, those who are most active in the antituberculosis crusade throughout the nation, complain of the tardiness in the diagnosis of tuberculosis on the part of the rank and file of the medical profession. The early diagnosis of this disease is one of the most difficult things in medicine and the technique of examination and diagnosis has radically changed within the past few years. In several states, and on an especially broad scale in the State of Michigan, a movement has been put on foot to bring experts in the diagnosis of tuberculosis into every county to hold clinics before the county societies. These clinics extend over at least two days, so as to permit the working out of the various tuberculin tests and other technical details of diagnosis. It is expected that, in this way, and through the instrumentality of the county medical societies, a most valuable piece of work is to be carried out in the warfare against this most widespread of diseases and at the same time there will be brought into each group of medical men a means of postgraduate instruction in a most neglected field of diagnosis.

In matters of legislation and in attempts to improve local situations through the enactment of ordinances there should be the closest cooperation between the State Board of Health, the local health authorities and the organized medical profession as represented by the county societies.

The program of the State Board of Health for constructive legislation includes the creation of a county health officer service for every county in the State and the Board is convinced that the citizens of the 102 counties, and more especially the residents of the smaller communities and of the rural districts, never will be afforded the health protection to which they are entitled until such a service is developed.

Recently we have divided the State into five districts and have placed a fulltime district health officer in charge of each district. It must be obvious to all of you that one man in charge of the health supervision of more than a million people scattered over an area of approximately 11,300 square miles is not in position to give such attention to the health needs of the people of his district as they should have. The fact is that he can cover only about one-twentieth of this area and do the work efficiently. The need is a full-time medical health officer in every county; a trained medical man selected because of his fitness for the position and devoting his whole time to the work.

Illinois, to keep abreast of other states awake to the best interests of their people, must create a service of this kind. It will prove a matter of great economy to every county and will be the means of saving hundreds of human lives annually. The State Board of Health asks you to assist in securing the legislation which will make this much-needed service possible.

At this time, I also take occasion to draw your attention to the deplorable inefficiency of the health organization of the average small town and many of the larger towns of the state. The niggardly appropriations for the purpose of health protection in many of these communities brands them as mighty unsafe places in which to live and the statistics of preventable sickness and avoidable deaths of these places bear testimony to the truth of the statement.

In scores of towns in this great, rich state, the officer charged with the responsibility of safeguarding the health of his fellow citizens is paid the princely sum of from $5.00 to $25.00 per annum. Think of it!

To you men who are officers of the county medical societies I say that it is your duty to see that this disgraceful state of affairs is corrected. Teach your people the need of buying health protection and prove to them that they get no more protection than they pay for. See to it that a fair compensation is provided for health protection and see to it that men competent to render the needed service are selected for the purpose.

The State Board of Health also earnestly solicits your co-operation in the enforcement of such important laws as the act relative to the registration of births and deaths, the medical practice act wherein it relates to the practice of unlicensed persons and in the enforcement of the rules and regulations governing communicable diseases.

The time at my disposal will prevent me from referring to more than one of these three laws; but I cannot close without advising you of the conditions now confronting us in our attempt to enforce the provisions of the medical practice act and telling you to what extent we must depend upon you and the members of your societies for assistance.

Doubtless all of you are aware that the Supreme Court, in its decision in the Fergus injunction suit, deprived the State Board of Health of its legal department and its legal funds and by this act, compelled us to depend upon the states attorneys of the various counties for such legal aid as we may require.

This places upon the Board a very serious handicap and has already resulted in a sharp falling off in the number of prosecutions of illegal practitioners. Moreover, as the fact of our predicament has become known to old offenders, they now feel that they may resume their illegal practices without fear of prosecution and the number of complaints of such violations has very materially increased.

The only way that we can cope with this situation is to ask the officers and members of the local medical societies to gather evidence against such violators, to advise the Board in detail of the facts in the case and also lay the facts before the local states attorney.

The Board will present such facts as it may receive in this way to the Attorney-General and we shall also advise and authorize the states attorney to begin prosecution. Before action can be had you may find it necessary to visit the states attorney several times, but if this necessity exists, do not fail to meet it.

The Board deeply deplores the situation. It is not one of our making; but it will do the best it can under the circumstances. With your assistance, and the assistance of the societies which you represent, we may be able to do more than we now anticipate.

DISCUSSION.

Dr. O. B. Wills, of Peoria, felt that the public, generally speaking, is very suspicious of the medical men as an organized body. Just as soon as a local society begins to participate very actively in that direction, the public get the impression that, as they say, "there is something in the wind." They cannot by any possibility understand that men would be so self-sacrificing as to sort of impoverish themselves, in a sense, by taking a very active interest in the promotion of public health, and whenever that effort is made we accept, in a sense and in a measure, the animosity of the public, and they are very unlikely to accept the overtures that come from the local health or from the state health body.

PRINTERS' INK IN ORGANIZATION.

THOMAS P. FOLEY, M. D.,
CHICAGO.
Secretary Douglas Park Branch Chicago Medical Society.

Without organization no medical society can be a success. The successful organization of a county medical or a state medical society depends on the activity of the society's secretary. Secretaries are born; rarely made. The subject of organization is such a large and complex one, presenting so many phases for consideration and discussion, that, in justice to those who are here to address you upon other topics, my paper must be devoted to one topic and phase: "Printer's Ink in Organization."

The question may be raised: why attempt to secure as a member of your society every eligible physician in your district? Will the thorough organization be an advantage to those already members? The answer is unhesitatingly yes, and yes with emphasis. The spirit of friendship engendered and the healthy rivalry in study instituted, which is necessary to attendance at the regular meetings, abundantly repays the secretary for every effort he may have made. The added satisfaction of having completed his term of office with the society in better shape, the meetings better attended, and the physicians of the district better physicians and better men because of a

closer study of medical subjects and increased friendship for each other is the eternal feeling of satisfaction which comes with work well done.

In the work of organizing a given district the secretary is dependent upon two factors or methods, (1) personal solicitation and (2) printer's ink.

Personal solicitation is the better method and the one productive of ideal results, but because of the time necessary for its proper accomplishment, the territory to be covered usually being quite scattered, it gives way to the use of printer's ink.

The objection may be raised that personal solicitation to join a medical society should be unnecessary with eligible physicians; that eligibles will join without being solicited. That solicitation should be unnecessary is granted and granted readily. Eligible physicians should recognize the necessity for medical societies and the advantages of such organizations to themselves. That they do not will be admitted by every secretary present.

Therefore, is it worth the time and expense to those in the fold to attempt to bring the light to the ones in darkness? Without doubt it is. For, sweeping aside for a time the consideration of altruistic motives, a medical society composed of ninety per cent. of the eligible physicians in a certain district has more dynamic force for good to themselves and their community than has a select organization of from twenty to thirty per cent.

If the secretary has the time and the inclination to work along lines of personal solicitation in spite of the objections thereto, the paramount factor for him to keep in mind is that he has a product for sale—membership in the county medical society. Having a product for sale it will be necessary for him to know all about that product. He must have his selling points arranged in logical sequence, usually holding the big selling point as a climax to his interview. Why? Because some solicited join readily as soon as the subject is broached. This percentage is large and consists of the bashful type, who are waiting for an invitation to come in. Some will require further talk and withhold the application until the direct benefit to themselves is appreciated. Some will require every reinforcement that the secretary has at hand before the application is signed. In this state probably the best selling point is the fact that the state society defends its members in malpractice suits. Showing a physician that he is paying three times more for his protection than is necessary and that with thirty-three per cent of the cost he will get so much more than the protection alone is a fitting climax in securing his application.

Turning aside from the question of personal solicitation, admitted to be the better method, we consider the subject of the paper "Printer's Ink in Organization."

How may this be used to organize your county medical society? Will the results obtained justify the means, the effort and the expense? The present is the golden era of advertising. Millions of dollars are spent each year in presenting to the public various products—mainly commodities, but some of them luxuries. This money is spent to induce people to buy. It is worth spending money to induce a man to buy an umbrella before the rainstorm, because when in the rain with your umbrella he appreciates your thoughtfulness. It is worth inducing a physician to join your society, so when he needs the society or the society needs him he or the society is an active force.

But in the use of printer's ink we must use extreme care and utmost caution. Properly used it is a supreme aid. Improperly used it is a great detriment. The greatest danger is the stock letter; the dead black and white; the lifeless jumble of words; the embalmed argument. How shall we go about it so what we write and send will be acted upon? So that what we send shall be read and not consigned unread to the waste paper basket? What we are after is action. Therefore, we must present to our prospects some of the means for bringing about action.

We all realize the danger of permitting things to be placed aside for consideration and usually forgotten. Therefore, what we use must be virile, personal, pulsating and actually living.

The ideal method of reaching prospects and also keeping your present members interested and active is through the publication of a bulletin or newspaper limited to your immediate district, issued either monthly or bi-monthly. The expense is not great and may usually be covered by advertisers in your territory who appreciate the opportunity of reaching medical men in a way that their advertisements will be read. We know that most mail advertisements to medical men are

promptly thrown into the waste paper basket usually without even a glance.

By the use of such a newspaper covering your territory, inserting therein the notice of your coming meeting and the report of your past meeting, the personal items of good fortune and sometimes the unfortunate record of misfortunes, you present a sheet of which your members are part and parcel. You present the personal living interest necessary to your society's success. We all enjoy reading our names in print and we enjoy news in relation to our neighbors. Curiosity is not confined to just Eve's daughters!

In aiding your organization the advantage of such a publication is in the fact that your own members are inspired to read papers, meaning better study on their part and better study on the part of those entering in the discussions. This idea of inspiration to study is one of the primary objects of medical societies.

Your members get extremely tired of attending meetings where they are mere onlookers; where the papers are confined to a few; where the papers are not of practical interest and to follow the lines established in these papers requires expensive apparatus. At such meetings members hesitate to discuss the papers read because they may be unfamiliar with the subject presented and because they feel hushed and silent in the presence of the high and mighty from the distant city.

Your members are just as apt at compiling statistics and quoting from the text-books and the current literature. Why not give them a chance? Get papers of practical importance from your members. This aids in your organization work because non-members reading of the work done by those already in the society are inspired to join. If you feel that visitors are necessary have them at the meeting to begin the discussion. In plain, unvarnished English: "Wake up your society and boost your own members." Let them see their names in print and let them know they are good students, but the fact has been latent.

A publication of this kind is sent not only to your members but to every prospective member in your territory. Reaching them in this way month after month you finally impress upon them the importance of becoming members; that is worth the time of every physician to be a member of your organization; that by attending meetings they will not only meet the physicians of the district, but that they will be partaking of the many scientific advantages presented. Their respect for the members of the society increases.

By everlastingly pounding away at the organization of your district here are a few of the big things you accomplish:

1. Good fellowship: When you get to really know the other fellow you find he has many virtues and few faults.

2. Better meetings because the papers are read by your own members and the discussions are freely entered into because the members feel it is their society.

3. The competition in your district is cleaner; prices are maintained because the medical men are on a friendly basis and working for their good and the good of the community.

4. The good to the community is manifested in the fact that at public functions and where questions of sanitation and public health are concerned, the community recognizes the society in the requests for speakers and for advice.

5. Social meetings come into existence and these meetings are a boom for the society. Friend wife is entitled to an outing at the expense of the society. The auto drive with the dinner and dance; the annual banquet in the fall or spring and the reception in the winter place a new aspect on your organization and make it easy for the physicians to attend.

6. Legislation: If your district was properly organized you would not see the futile efforts the medical fraternity make in legislative halls when some bill is pending detrimental to their interests. If physicians only recognized their proper political strength in a legitimate way they would have a large share in the selection of the representatives and senators from the various districts. When they do this through their proper organization they will not be depending upon the word of politicians who in the past have been found wanting. In this famous speech Patrick Henry said: "I have but one lamp by which my feet are guided and that is the lamp of experience. I have no means of judging the future except by a consideration of the past." Judging our future by a consideration of the past laws it is a proper and appropriate time the physicians woke up and asserted themselves for their own protection.

A VALUABLE AID IN OUR WORK.

E. W. FIEGENBAUM, M. D.,
EDWARDSVILLE, ILL.
Secretary Madison County Medical Society.

Organization is the life of the profession. Without it we would each be sailing our own little boat without any reference to the other fellow; we would keep on in our own little narrow rut, repeating our mistakes year after year, having no opportunity to compare our work with the work of others round about us. Organization is what makes meetings like this possible, where we come in contact with our fellow practitioners, who are up against the same problems that we are trying to solve. Here we give and take; here we meet each other, forming very pleasant and lasting friendships. Organization promotes harmony and gives the death blow to the rancor and animosities that were at one time so prevalent in the profession. You show me a man who is everlastingly at war with his fellow practitioners, who has no word of commendation for any one in the profession, except himself, and I will show you a man who is not a member of the organization, a man who is narrow between the eyes, a man who has a lot of sawdust mixed with the gray matter his cranium is supposed to contain and a man whose soul shaken in a peanut shell would make an audible noise. Such a man has missed the true meaning of the title "doctor" and is a mere pill peddler.

Organization stimulates us to greater endeavor, increases our interest, promotes the spirit of emulation. We can not be true members of our societies without becoming better men, better doctors, with our whole beings filled with zeal and enthusiasm. In short, organization is what has put the "*fizz*" in "physician."

The basic unit of medical organization is the county society and the main-spring of the society is the secretary. No secretary can make a success, unless he has behind him a united working society; but even so, no society is a success unless it has an active working secretary, and such a man is hard to find. He must be a man of high ideals, thoroughly devoted to his profession, broad enough to overlook the frailties of humankind and ready at all times to subscribe to the doctrine of the great brotherhood of man. He must work in season and out of season with all kinds of people. He must listen with patience to the complaints of some members and be ready to rejoice in the success of others. In fact, to do the work right is some job and he needs all the help he can get to hold it down.

Nothing is so helpful to the secretary in his work as to have the hearty co-operation and interest of all the members of the society. When we all pull together for the advancement of the organization we are bound to have a real live society, which in turn makes for more interest and enthusiasm. In our experience the most valuable factor in securing this interest and co-operation has been the publication of our monthly bulletin, *"The Madison County Doctor"*.

Six years ago we began this publication by issuing a very modest little sheet of four pages, but it met with the hearty approval of our members instantly and it was enlarged to eight pages. A demand for more was forthcoming and for the last two years we have been carrying twelve pages. To have a little newspaper all our very own to chronicle the events in the lives of our members and to give them month by month little articles on medical matters, both in state and nation, pleased our readers very much and the society voted all the money, which in the judgment of the secretary, was necessary for the betterment of the little Journal.

Now as to the policy of the publication. We conscientiously keep out of our columns anything of a scientific or pedantic nature; no paper on any subject, whether read before our society or elsewhere, is ever published, however worthy it may be; no voluminous dissertation on laboratory research or results ever appears. We leave that for the many efficient state journals and the *Journal A. M. A.*, that cover this special field. We try to put into our columns short, snappy articles which indicate the trend of improvements in methods and practice. If we find anything worth writing about or if we find anything in medical or lay publications that will be of interest to our members, that will make them better men and better doctors, that will help them to keep in touch with the general advance in our profession, that goes in, but it must be short and right to the point.

In our news items we exercise great care not to mention the professional work of any member, thereby escaping the criticism that we are boosting the interest of any man or set of men. However,

anything that appertains to the doings of our members in a personal way or their activities as citizens is eagerly sought for and chronicled in our news columns. If a new doctor comes into our county his name and location are given immediate publicity. If one of our members moves to another location his new field of labor is made known to our readers. If he builds or buys a house, gets a new machine, takes unto himself a life-partner or has an addition to his family, he, of course, would like to have this fact known to the rest of the fellows and his wishes are gratified every time. We mention the names of as many doctors in our news columns as we possibly can, but never in connection with a patient or in any professional capacity.

But the chief value of the publication lies in the fact that it gives the secretary an opportunity to talk to all the members of the society once a month. He can tell them of the wonderful meeting we had last month and of the still more interesting meeting we are going to have next month. He can announce the speaker for the next occasion and by a few words of special introduction stimulate curiosity and interest which will insure a larger attendance. He can write an article on delinquent dues, which sometimes brings an avalanche of checks, much to his surprise; in fact, if the secretary has anything in his system that he wants to get rid of, it gives him a chance to do so before he explodes.

We send a copy to every doctor in the county, whether he is a member or not, and by this means we bring all of the medical men in contact with each other. The new man coming into our county becomes thoroughly acquainted with our organization before he submits his application and immediately forms a higher estimate of his fellow-practitioners and is enlisted as one of the workers for the benefit of the profession.

To do justice to yourself and the members of your society some time and thought must be devoted to this task, but you will find that, if your heart is in the work, it will not require near as much labor as you may now imagine. Preparation for the next issue must be made as soon as the current issue is mailed out. Some interesting bit of general information will be found in your reading; something that strikes you as valuable will probably prove interesting to your readers. This must be clipped and filed away for future use. As you go about your daily work some thought will come to you that can be made the basis of a snappy, newsy article for the next issue. This must be taken up in your moments of leisure, written out in an interesting way and also filed. Get in touch with all parts of your county and get news items about your fellow-practitioners; get personal items about them and their families. Mention them by name, for it will gratify them to be so noticed and it will help you to fill up your columns. Day after day these efforts will accumulate until long before the month is up you will have more than enough manuscript to fill up your next issue, all ready to go to the printer. Of course, if you delay your preparations until a day or two before you go to the press, you will find it hard work to get the appropriate material and then it will be a source of worry. The editor of *"The Madison County Doctor"* always has enough material in his filing case to fill one or two issues of the paper and some little article is added to this supply almost every day and when publication day comes it is the work of only a few minutes to select enough of this stock on hand to complete the edition. I want to assert right here that any doctor who has brains enough to be a real secretary to a live county medical society has sufficient ability to write, either with pen or scissors, enough to fill four, eight, or twelve pages of a monthly bulletin.

DISCUSSION.

Dr. C. D. Pence, of Chicago, said that the two papers just read were by men who know what they are talking about. They have made good as secretaries before they read these papers. The *"Madison County Doctor,"* of course, is known to all of you. It is known beyond the confines of this state and you see it quoted from frequently. It has had a great deal to do with the building up of the Madison County Society. The bulletin undoubtedly builds up any society, but to get out what should go in it requires a secretary that has hustle in him, and does not put everything off until the eleventh hour.

The reader of the previous paper (Dr. Foley) has made good as a secretary in Chicago, he has made good in a branch of the Chicago Society that has been one of the hardest in the entire city to handle The doctors of that branch in which Dr. Foley and myself live are composed of men of many nationalities. There are enough men of several nationalities to form "cliques," and they do form cliques in that way, so it takes a hustler to get around and get those cliques together. Dr. Foley has succeeded in doing that. Printers' ink is one of his methods, but back of that a society has got to have a man who hustles, who hustles at the right time, as I am quite

confident that both the writers of these papers have done.

It would seem to me that in electing a County Secretary, that when a society gets a live secretary and one who is fitted for that special position—and many of us are not fitted for it—they should keep him there. I think the secretary is one of the men who should not be taken out of the position, but kept there as long as they can keep him. I wish that this organization could educate more secretaries like Dr. Fiegenbaum and like Dr. Foley for the various county societies in the state. If we had more secretaries of their type we would have more county societies that were active; there would not be so many men throughout the state who are not members of the society.

Another feature of a secretary that I would like to bring up, is that he must do the work at the right time. The society now has a matter pending which will probably cost one of the members—will either cost one of the members or the society—about three hundred dollars, and as I see the case at the present time, that cost is due to the slowness or the inactivity of the secretary. Those things should not be. We all realize that the secretaries have things to take care of aside from their work as secretary, but if they accept the office of secretary of a medical organization they must expect to give it the time and to hustle for the society.

HOW TO PROMOTE THE INTEREST AND ATTENDANCE IN OUR COUNTY SOCIETIES.

ANDY HALL, M. D.,
MT. VERNON, ILL.

There are only two things that will induce the average physician to close his office and spend a few hours once a month attending a county medical meeting. One of these is profit and the other is pleasure. Hence, if we will arrange our programs so that when a physician spends an evening with us we can add something to his store of knowledge that will enable him to do better work than he did before, and if the social program has been such that he will remember with pleasure an evening spent with congenial friends, who are ever ready to meet, greet, and assist him in his professional work, he will become interested and attend other meetings. In fact he will look forward to these meetings with as much pleasure and enthusiasm as does the small boy to the coming of Thanksgiving Day, Christmas and the Fourth of July.

But on the other hand if our scientific program has been a frost and a failure, and if two or three of the physicians present have carried "chips" on their shoulders and have consumed most of the time in washing their "dirty linen" and airing their personal grievances, a physician who values his time and has any self respect will shun us as he would a den of poison vipers.

The members of the local society should be encouraged to prepare, read, and discuss the scientific papers. Most of the county societies have several men who have had much experience in the practice of medicine, surgery and the specialties, and are perfectly competent to prepare interesting, instructive, and creditable papers. There are other members of the society who *think* they can prepare good papers, and they, too, should be given an opportunity occasionally, to tell what they know.

The man who delves down into medical literature and prepares a scientific paper will learn many important things that he will never forget. He will derive more benefit from the preparation of his paper than will any other member of the society. It has been our observation that a paper read by local talent will be more freely discussed than one read by some important "Big gun" from Chicago, St. Louis or Champaign. Hence the important points will be emphasized and the members will derive most benefit from it.

It is highly essential to make every member feel that he is an important member, that you want him to take an active part in the discussions, and give him an opportunity to prepare a paper or report some interesting case. Don't let a few "High brows" run your society, but give every member an opportunity to be seen, heard, and consulted about things pertaining to its welfare.

There is nothing that is more humiliating to the officers, disappointing to the members, and hastens dissolution of your society faster, than the failure to have a good scientific program ready for each meeting. There is seldom any excuse for this condition if the secretary is onto his job.

Never arrange with three or four members to furnish papers on three or four important subjects for the same meeting; for the chances are that they will each say, "We will let George do it this time," and they will all be absent, or if present will be unprepared. Recently I received an invitation to attend a medical meeting in an adjoining county. On the program were four men, assigned to discuss four important subjects. In conversation with the secretary of that county

a few weeks later, he informed me that not a single essayist put in his appearance. "What is everybody's business is nobody's business."

It has been our custom to exact a promise from only one member to prepare a paper for a meeting. We let him understand that his will be the only paper on the program, and that it is up to him to make good. Not more than twice in the past two and a half years has the essayist failed to be on hand with a good paper—on both occasions we were notified in time to make other arrangements. When you have exhausted your local talent, and not until then, invite some good physician from some of the adjoining counties or neighboring cities, to address your society.

One good paper on some timely subject, followed by a free discussion is enough for one evening's scientific program, and is of more value than two or three indifferent papers on as many subjects hastily passed over.

Ordinarily the scientific program should not last longer than one and a half hours. When this has ended, do not grab your hats and rush for home, for one of the most interesting parts of the program should follow. Meet all the members and especially any visitors that may be present. Have some refreshments, some music, some readings, some good stories, some games or other entertaining diversion. It is time well spent, and will bear fruit in producing good fellowship between the members, and in an increased attendance in your meetings. I have my personal opinion of any physician who will smoke a cigar or drink anything stronger than coca-cola. But most physicians like a good cigar. And in the dry counties of Egypt you would be astonished at the number of physicians that will drive ten to fifteen miles, and patiently sit an hour or two listening to the scientific program, in order to get a few bottles of that beverage that made Milwaukee famous!

In counties where the membership is small you can frequently discuss some subject of common interest to the dentist and druggist, and invite them to attend your meetings. It is also a good idea to have at least one or two open meetings during the year and discuss some subject of interest to the public.

In mailing out notice of your meetings do not send a postal card or a printed program under a one-cent stamp; for they will probably find their way into the waste basket unopened and unread. A better way is to write each member a personal letter, sign your name in ink, and mail it about one week before the date of meeting. On the date of meeting we have each member that can be reached, called over the telephone and again reminded of the meeting. If a member has been absent at a meeting, we often add a few lines to his notice telling him about the many good things that he missed and urge him to be present at the coming meeting.

It is possible that the interest and attendance in county medical meetings can be maintained by using other methods than the methods here suggested; but I do know that these methods have worked well in Jefferson County, as a glance at the secretary's record will show.

Our county society was organized in August, 1904; the first few years following we had several good meetings. Then things began to drag; sometimes we had a good attendance and no scientific program ready, at other times the program was ready but no quorum was present. Finally, when the meeting-day rolled around, we had neither program nor quorum. We had thirty active physicians in the county, but with the methods in vogue at that time, it was not possible to have a successful meeting. About one-half of the physicians had no use or professional respect for the other half, and medical ethics in a measure became a lost art. During the year 1913 only two meetings were held—one in January and one in June. At the June meeting we had no program. But from the secretary's report I find that "This meeting was called for the purpose of discussing ways and means by which the members may be induced to take a greater interest in the Society." Notwithstanding many heroic remedies were suggested and tried, we were unable to resurrect the patient or find any evidence of life until more than six months had passed.

In January, 1914, we elected new officers, who adopted the methods I have attempted to outline, and we have continued them ever since. During the year 1914 we had ten good meetings, with an average attendance of eighteen physicians. During the year 1915 we had seven meetings, with an average attendance of more than twenty-three physicians. Including visitors, during the past year our average attendance has been thirty. Out of thirty eligible physicians in Jefferson County,

twenty-eight are members of this society, and their dues are all paid in advance. The fraternal feeling between the physicians in our county is the best in the history of the county.

DISCUSSION.

Dr. J. W. Dunn, Cairo, said, concerning the doctor's apparent criticisms of the occasional custom of sending to Chicago or St. Louis or some other place for a "high-brow": As a general thing I admit that it is not a good thing to do, if you do it at the expense of local talent. It is always best to have your local talent interested sufficiently to get them to respond to a call for a scientific program. However, I do not believe that it is altogether the best thing to be done to wait until local talent is exhausted before you send for the "high-brow." I believe that the occasional visit of a so-called "high-brow" from the cities is beneficial to the county medical society, even before the local talent is exhausted. I believe it adds interest. My experience has been that on those occasions we frequently have a larger attendance than on other occasions and that we have a deeper interest, a great many of our men coming out and listening to a man from abroad, when we found it impossible to get them out to hear one of our local men.

The other point I wish to notice is this: What the doctor said about the beverage that makes Milwaukee famous. We will not turn this into a prohibition campaign or a discussion pro and con, but as scientific physicians I simply want to drop this observation, as recommendation to keep up interest in a local society I think it is a bad thing to adopt.

Dr. Fiegenbaum agreed with the writer concerning three or four subjects for any particular meeting. For many years the Madison County Medical Society has met twelve times a year and they have only one subject for each meeting. One speaker reads a paper or gives an address on that subject and the men who are to discuss that subject are notified in advance of such an appointment and told to be ready, and nothing else is brought up in the scientific program of that meeting except that one particular subject. Any subject in medicine is large enough to occupy the attention of a county medical society for one meeting, and it is a waste of material to introduce three or four speakers on three or four subjects.

Another thing. The Madison County Medical Society is fortunate in this, that it is addressed by a "high-brow" at every meeting. We are very fortunate in Madison County in having a great many "high-brows" residing in that county. And it doesn't make much difference to us where the "high-brow" comes from, whether it is in our county or an adjoining county, whether it is in our state or an adjoining state, so that the "high-brow" brings us an interesting and instructive message. It is true we do not confine our speakers to our own membership, and we hail with delight the occasional visit from abroad, but as far as our members are concerned we can see no difference in the message.

Dr. W. F. Grinstead, Cairo, said we must not judge the importance of this series of papers that have been presented here this afternoon by the amount of discussion that they have brought out. These papers will be read, even by those of us who have heard them; we will read them when they are published, when we are at home and have more time and a better opportunity to think them over. And they are going to be read by, I was about to say ten times as many people as have heard them here this evening.

The doctor had recently learned that the members who do not attend society meetings have an excellent opinion of medical societies and medical society work. In a certain county society report the names of all the members who attended were given, and in connection with their names, their office addresses were given. The idea as afterwards brought out was to lend a little encouragement by publicity to these men who had attended and to let the public know who the county doctors were who were interested in the medical organization and in threshing out among each other the knotty problems of their work. It just happened that in that county there were only a few doctors that did not attend, but from them there was a storm of indignation stirred up. The publicity of their absence was the point. The fact that the public were made aware that they did not attend and that they were not interested in medical organization made them furious.

He advocated clinical reports of cases at meetings as were valuable. By this method every member who attends meetings of the county medical society is ready to help his neighbor solve the knotty problems of his work.

Dr. D. W. Miller, of Gilman, mentioned another phase of the subject. We have found it to be an advantage to have one social meet during the year on different lines. One year we had a fish fry; went to the river, took our wives and daughters and families and had a social time and spent the day that way, and several times we have had banquets and met in the evening, and the younger portion of the profession dance and get acquainted with each other. We have brought in some members that I do not think otherwise would have been brought to us. They saw there was something else in it besides work. All work and no play makes a dull boy, and we come to get acquainted with each other.

FULL TERM ECTOPIC GESTATION WITH REPORT OF CASE.

G. W. GREEN, M. D., AND J. J. MOORE, M. D.,
From the Ravenswood Hospital and the Department of Experimental Medicine, University of Illinois.
CHICAGO.

Several cases of full term ectopic gestation have been reported during the last few years,

each of special interest to the surgeon, gynecologist and obstetrician. McDonald[1] collected 245 cases up to 1911, 211 of these being reported after 1887. The increasing reports of such types of gestation indicate that the present careful and more perfected methods of diagnosis, especially with the aid of radiography, reveal many instances that formerly were overlooked.

Full term extra-uterine pregnancy commonly results from tubal gestation rupturing into the space between the folds of the broad ligament. In fact, Tait believed that this was the only circumstance in which extra-uterine pregnancy could develop to full term. After such a rupture, the sac is completely retroperitoneal and in growing, disects the posterior parietal peritoneum to involve the meso-cecum. This condition is termed extra-peritoneal or broad ligament pregnancy by Williams[2] and tubo-ligamentous by McDonald.[1] Occasionally growth of the fetus within the folds of the broad ligament goes on to full term, but most cases of so-called full term broad ligament pregnancies develop posteriorly to this ligament.

The placenta may assume various shapes and forms, but the more common variety is flattened, discoid in shape and thin. Microscopically the fetal portion of the placenta is identical in structure with that found in uterine pregnancy. It is attached usually to the posterior layer of the broad ligament in the cul-de-sac of Douglass and receives its vascular supply from the utero-ovarian vessels or from the lower mesenteric, the latter being especially true when the post-parietal peritoneum has been dissected up.

The fetal sac at full term is usually made up of fibrous tissue and the flattened tube wall. It is usually tough and fibrous, but may be friable, which is frequently the case when the fetus is dead. It varies in thickness from 1 mm. to several centimeters. The ovary may be flattened and incorporated in the surface of the sac, the tissue being recognized with difficulty. Muscle cells arising from the muscularis of the tube are found in small number. The inner surface is covered with amnion. When the gestation occurs retroperitoneal, a sac is always present, but several cases are on record where the fetus developed with no sac surrounding it. The life of the fetus depends not upon the integrity of the sac, but upon the nourishment of the fetus through the intact placenta and cord. Rupture of the sac is not common after the fourth month.

The liquor amnii is small in amount and straw colored unless the fetus has been dead for some time, when it becomes blood stained.

The cord is usually shorter and thicker than in the uterine gestation.

The fetus is on the whole smaller than is a normal pregnancy, and frequent deformities from pressure and malnutrition are present. Sittner reports 5 cases in 17 dying from deformities.

Spurious labor pains set in at term which may last only a few hours to weeks. The cessation of these is coincident with the death of the fetus as a result of dislocation of, or hemorrhage into the placenta. After the death of the fetus the secretion of amniotic fluid ceases, it is absorbed, and the abdominal tumor decreases in size. It requires, according to McDonald, 2 to 6 months after the death of the fetus before there is entire obliteration of the placental vessels and marked lessening of the circulation.

Report of case. Mrs. Anna S., aged 38 years, married 23 years, housewife. Referred by Dr. W. K. Yeakel, March 28, 1914.

Family History: Father dead, aged 67 years. Abscess of lung. Mother living and well. Five sisters alive and well. One sister died of dysentery at 15 months. Two brothers alive and well. One brother had measles at 19 months and died.

Diseases of Childhood and Puberty: Patient had measles and mumps with good recovery. When about 16 years old she had rheumatism for twelve weeks. The latter part of the same year she had typhoid fever. At 18 years she had diphtheria.

Menstrual History: Began at 13 years of age, regular every 28 days, duration four or five days. Some pain the first day of flow. This has been worse the last two or three years.

Married at 17 years of age. Husband living and well, although periodically addicted to use of alcohol. First child born two years after marriage and is alive and healthy. Patient states she could not become pregnate until she had a physician dilate her womb.

One artificial abortion when three months pregnant when the living child was 10 months old. This was induced by and on the advice of her family physician. Patient was sick about two months from this abortion and finally had to be curetted by another physician while away from home, before she became well.

Patient said she always wanted more children but her periods have been regular for the past eighteen years.

1. McDonald: N. Y. Med. Jour., 1911, xciv, 1059.
2. Williams: Obstetrics, 1916, D. Appleton & Co., New York, p. 642.

No leucorrhea during menstrual history but has taken two or three vaginal douches per week.

Present Illness: Has not been feeling as well as usual during latter part of April and fore part of May. Felt weak and chills occasionally, pain across the lower part of abdomen. Could not do her house work without getting tired, which was unusual.

On May 12, 1913, commenced her last menstrual period. This was her regular time; the flow was normal in quantity, color and time, stopped on the 17th.

On the 20th the flow began again and continued rather profusely until June 21. This was accompanied with considerable discomfort in lower part of abdomen, so much so that she visited a physician on June 18, who made a vaginal examination; and prescribed one dozen vaginal suppositories and soap and water vaginal douches, which caused the flow to cease in three days. At this time she thought her breasts were enlarged and tender.

July 10, 1913, patient had severe attacks of pain across the lower part of the abdomen, says she could not rest in any position. Thought it was "cramps." She used hot water bottles on abdomen and the next morning it was nearly gone. There was no flow at this time. The latter part of July she saw her physician who diagnosed pregnancy and found milk in her breasts.

August 7, 1913, patient had another severe attack of pain, "a peculiar pain in lower part of abdomen that seemed to come up through the mouth," which was so severe as to cause vomiting and fainting several times. The pain lasted all night. A physician who was called ordered hot compresses to abdomen. No vaginal flow. After this attack, patient has always felt faint and more so when her bowels moved.

Abdominal enlargement began early and was quite marked from the beginning.

Life was felt about the middle of September. From September on, the abdomen became very large and patient was obliged to spend a good part of her time in bed as standing was difficult on account of general weakness and pain in back. Always had a pillow under back when lying down. Visited her physician in October on account of general discomfort, but physician made no vaginal examination. In January, 1914, had sharp pains running down the back and occasionally they radiated into the abdomen, but never into the rectum. These did not seem like labor pains.

On February 11, 1914, had periodic pains in the pelvis every five or ten minutes. Physician called and vaginal examination was made. Breech presentation diagnosed and the prediction made that baby would be born in about two days. These pains disappeared after having lasted about two days. Fetal movements which had been quite marked up to this time now ceased. After this, patient was unable to get out of bed alone and had to be lifted up and down in bed. A bloody vaginal discharge now commenced, the blood was clear on some days and on other days it was dark. This continued until patient entered the hospital. Appetite was lost at this time but partially regained in March.

Every afternoon about 4 o'clock patient felt feverish and this was followed by a chilly sensation.

She thought abdomen was growing smaller. Had pain when reclining. Two weeks before entering the hospital experienced a sharp pain in the abdomen which felt like something tearing loose on the inside of the region of the naval. Sleep poor since fetal movements ceased. Has had fever, 101, for several weeks before entering Ravenswood Hospital on March 28, 1914. Patient states she had not had a night's sleep since February 11.

Physical Examination: Showed a medium sized fairly well nourished, but rather thin woman of about 38 years of age. The eyes slightly jaundiced, skin yellowish brown color and dry.

Heart and lungs normal. Abdomen much enlarged, probably a little more on the right than on the left side. Marked pigmentation especially the linea alba.

External examination shows a tumor, without question a fetus with pelvic presentation back to right side and slightly posterior, head flexed to the left. Small fetal parts felt in the right lower quadrant. Some tenderness over a small palable tumor mass located just above the symphsis and left Poupart's ligament. Tumor feels to be one-half to three-quarters inches thick, about 4 inches wide and upper part is oval in contour and it feels as if it were attached to the large tumor mass.

Auscultation: No fetal heart sounds heard after repeated examinations. Very marked uterine souffle heard best a little to right and above the umbilicus.

X-ray showed fetus in breech presentation.

Vaginal examination not very satisfactory on account of tenderness of patient. Cervix was soft and nearly obliterated and easily admitted one finger to internal os; on right of cervix a soft mass was felt which was thought to be the placenta.

Urinalysis, negative; blood examination, negative; temperature, 99.4, 100.4 F.; Pulse, 90, 100; respiration, 22; Wasserman, negative.

Operation, March 30, 1914. Median abdominal incision extending from two and one-half inches above the umbilicus to the symphysis pubes. The gestation sac and contents was situated retroperitoneally more on the right side. No right ovary or tube was found. The uterus was slightly enlarged, very soft and extensively flattened anterior-posteriorly and situated to the front of and to the left of the gestation sac. The left ovary was flattened and cystic. Left tube somewhat enlarged.

Strong bands of adhesions containing large blood vessels were found running from the omentum into the peritoneally covered sac. On the right side the ureter was found stretched over a portion of the tumor. The left ureter could not be seen.

The adhesions and blood vessels coming from the omentum were ligated and severed. The peritoneal covering of the sac was incised from above down, a distance of twelve or fourteen inches. Peeling this

off from both sides of the gestation sac the sac and contents were peeled out en mass without opening. The chief site of attachment was found to be in the right side of the pelvis posteriorly. After removing the sac the posterior layers of peritoneum were trimmed off and sutured with catgut. The left ovary was left in place. The left tube was removed.

Abdominal wound was closed in the usual manner. No drainage was used. Recovery of patient uneventful.

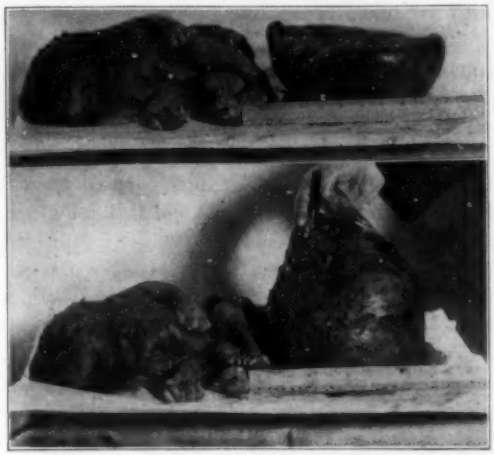

Fig. 1. Sac and Fetus at Removal.

The removal of the tumor at this time was likely much easier than it would have been just before the death of the fetus at the end of full term.

Gross Appearance: The tumor sac unopened measured 21.5 centimeters in diameter. The outer surface was covered with many fibrous tags as the result of adhesions. Upon opening the sac about two quarts of red stained amniotic fluid escaped. A fully developed undeformed female fetus, slightly macerated, weighing eight and one-half pounds was removed.

The upper portion of the sac was 4 mm. in thickness and fibrous in character. The lower portion, containing the placenta, was a circular bowl-shaped mass measuring 7.5 cm. in thickness. (See Fig. 1.) The inner surface of the entire sac was covered by a thin, transparent, smooth amnion, which could be quite easily separated from the tissue beneath. Over the placental portion large vessels could be seen. No distinct separation of the placenta into cotyledons could be observed. The umbilical cord is 45 cm. in length by 1.5 cm. in diameter, and attaches at the margin of the placenta. On cutting into the mass it does not show the structure of placental tissue, but that of a large blood clot, being smooth, dark colored and containing yellow streaks of fibrin.

Microscopic Appearance: Sections were made from several different locations of the sac. Those from the thinner portion contained connective tissue with an occasional muscular fiber. In one series of sections a flattened epithelial structure with columnar epithelium similar to that of the tube was found, and which, in our opinion, is the compressed remnant of the tube. Fig. 2 well represents this compressed tube and the structure of the surrounding tissue.

Sections from the bowl-shaped mass contained placental tissue with chorion villi and blood spaces identical with those found in full term uterine pregnancy, except that degenerative changes were more marked, owing to the retention of the dead fetus for several weeks. However, the placental tissue was not as thick as that in uterine pregnancies. Here and there throughout the placental structure were scattered islands of decidual tissue. Blood and fiber composed the principal part of the structure beneath the placenta. In places small amounts of connective

Fig. 2. Compressed Portion of the Fallopian Tube in the Wall of the Fetal Sac.

tissue could be seen. The outer surface was made up of fibrous tissue similar to that in the upper portion of the sac.

Undoubtedly the large porton of the bowl-shaped mass was due to a hemorrhage which probably occurred at the time of spurious labor. This hemorrhage into the placenta produced the over weight. Briggs[3] reports a case almost

3. Briggs: Proc. Royal Soc. Med., 1911, v, 12.

identical with ours, in which hemorrhage within the placenta caused a similar increase in weight.

PHILIP LEWIN, M. D.,
CHICAGO.

Constipation may be of two types, atonic or spastic. Atonic constipation is by far the more common type. The spastic variety (1) is due to a spasm of the large intestine as in lead colic, (2) accompanies mucous colitis as in neurasthenics, (3) follows the acute diarrheas.

The atonic variety, concerning which this paper is especially interested, is due to lack of tone of the intestinal musculature and absence of normal peristalsis. The factors involved are seven in number and are as follows:

1. Disturbed innervation of the muscles.
2. Primary weakness of the musculature.
3. Faulty residue due to improper diet, i. e., a residue that is inadequate to stimulate normal peristalsis either mechanically or chemically.
4. Bad habit, i. e., suppression of the desire to go to stool. The patient says he is "in the wrong place at the right time."
5. Sedentary life.
6. Repeated pregnancies causing:
   (a) Pressure on the bowel by the head of the child.
   (b) Relaxation of the abdominal wall.
   (c) Parturitional lacerations of the levator ani muscle.
7. Stiller's type (asthenia universalis congenitalis). Tall, thin, nervous, anemic, poorly shaped thorax and abdomen, dyspeptic, visceroptotic individuals in whom everything is lax.

THE TREATMENT OF ATONIC CONSTIPATION.

Habit and diet are the two most important factors and will control probably 90 per cent of the cases.

Habit.—Habit is the most important factor of all. Everything that follows is aimed at establishing the habit. A good routine is as follows:

1. Arise. If possible retain urine until going to stool.
2. Bathe.
3. A glass of lukewarm water containing a pinch of table salt.
4. Breakfast.
5. Male, shave, etc.; female, toilet.
6. Go to stool. Forbidden: Books, magazines, newspapers. Patient must know why he or she is at stool and should concentrate his or her mind. Patient must remain at stool 5 minutes if necessary, but not longer than ten.

Diet.—The diet must furnish adequate mechanical and chemical residue. Meat gives about 7 and eggs 8 per cent residue. White bread and milk give very little residue. The following furnish considerable residue: Rice, oatmeal, rye and graham bread, bran bread and muffins, pumpernickel, carrots, cabbage and parsnips. Rye, graham or bran bread should be eaten with each meal. Potato may be eaten liberally and if baked the skins may be eaten. As to chemical stimulants I shall mention honey, sugar, fruits, lemons, lemonade, buttermilk, cider, apple sauce, figs (syrup of figs contains no figs), apricots, pineapple, marmalades. Honey may be eaten for breakfast, if not desired may use syrup. White sugar is constipating. Milk sugar may be used to sweeten coffee. Sauces at each meal. Apples, stewed figs, stewed peaches, stewed prunes, marmalades. Apples, apricots and figs stewed together are excellent. Patient should have vegetables once or twice daily. Spinach, carrots, parsnips or well cooked cabbage. Raw apples with each meal. Cider and buttermilk between meals. If necessary, in morning take the juice of half a lemon sweetened with glycerine.

Very little condiments, as pickle, pepper, catsup, mustard, horseradish, etc. Avoid irritating food, i. e., chemical, thermal or mechanical irritants. Chew food thoroughly. Water freely between meals.

The following are recipes for bran bread and bran muffins:

Bran Bread:

2 cups bran flour,
1 cup white flour,
1 teaspoon baking soda,
2 tablespoons molasses,
1 cup milk,
1 egg,
½ cup raisins.
Mix baking soda and molasses first,
Bake ¾ of an hour.

Bran Muffins:

1 cup white flour,
4 teaspoons baking powder,
½ teaspoon salt.

Sift together. Then add:

1 cup bran flour,

½ cup syrup.

1 cup milk,

1 egg previously well beaten.

Mix well. Then add 1 tablespoon melted butter. Bake in muffin pans in a moderately slow oven for 30 minutes.

Hygiene.—1. Exercise must be regular, in open air and with a definite purpose.

2. Care of the teeth. Patient should have at least two tooth brushes and use them alternately. Dental powder is better than paste. Patient should be taught to brush teeth properly.

3. In cases of visceroptosis a binder or surgical corset is indicated.

4. Massage of abdomen may be very helpful.

Auxiliaries.—I have grouped under this heading several points as follows:

1. Agar to increase the residue and enhance the water-content of the intestine. It may be used plain or as "Regulin," a proprietary preparation containing some cascara. The plain should be taken in tablespoon doses, 3-4 times a day; the regulin, 1 teaspoon 3 times a day. Colax is agar in the form of a wafer.

2. Uncle Sam's Health Food is very valuable in some cases.

3. Milk of magnesia is very good to neutralize the frequently associated hyperchlorhydria. 1 teaspoon is taken as needed. Equal parts of magnesius oxidum ponderosum and sodium bicarbonatis may be used for the same purpose.

4. Laxative wafers are frequently beneficial.

5. Prunes and senna as follows:

Steep 5 cents' worth of senna leaves in a quart of water. Turn out gas. Add 1 pound of washed prunes, cover and allow to stand 24 hours. Eat 5-6 prunes each night. Keep in ice box.

6. Mineral oil. American or Russian. As it is a mineral oil it is not absorbed.

Rule 1. Take as much or as little as necessary. The patient must ascertain the dose for himself. Start with 1 tablespoonful after each meal and at bedtime. He may take 8 tablespoons in 24 hours.

Rule 2. Decrease the dose gradually. It is much safer to extend the treatment over several months, decreasing gradually rather than try to effect a rapid cure. It is advisable to continue taking ½-1 teaspoon each night for 2 months after what appears to be a cure.

The oil may be taken with anything the patient desires, viz.: port wine, lemon juice, orange juice, fruit, candy, milk, buttermilk, etc., unless there is a special contraindication. An excellent preparation consists of equal parts of mineral oil and crab apple jelly or jam.

7. Vaseline, 1 teaspoon 2 to 3 times a day has been recommended as a substitute for mineral oil. It is taken between swallows of buttermilk.

8. Phenolphthalein is a valuable adjunct to the mineral oil in the early treatment. It should be discontinued as soon as possible.

9. Enemas.

(a) At night olive oil, 5 to 6 oz. (warm) to be retained.

(b) In the morning ½ pint of warm water not to be retained.

10. If there is any gross pathology present it must be corrected, viz.: gingivitis, pyorrhea, dental caries, sinus disease, infected tonsils, chronic appendicitis or gall bladder disease, gastric, or duodenal ulcer, hemorrhoids, fistula in ano, lacerations, visceroptosis, etc.

Conclusion.—I believe 90 per cent of cases of atonic constipation can be controlled by habit and diet. Of the remainder, 9 per cent can be controlled by the addition of mineral oil. The other cases can be relieved by the other measures given.

I desire to repeat that habit is the most important factor.

30 North Michigan Blvd.

THE MICROSCOPICAL EXAMINATION OF FECES AND ITS CLINICAL SIGNIFICANCE.*

S. M. Wylie, M. D.

PAXTON, ILL.

The microscopical examination of feces is recognized today as an important but neglected field in clinical medicine. It not only supplements all other means employed in the diagnosis of gastro-intestinal diseases, both structural and functional, but adds positive diagnostic information of great practical value.

*Read at meeting of Iroquois-Ford Medical Society, June 6, 1916.

The physical, chemical, Roentgenographic and microscopical examination of the gastric contents, both fasting and after the usual test meals, has become a routine procedure, but since the stomach is the seat of the disease less frequently than the intestinal tract, and in view of the fact that fully nine-tenths of the digestion and absorption of foods takes place in the intestine, the importance of knowing more than we do at present concerning its disturbances becomes apparent to us all.

Impairment of motility, digestion and absorption results in disturbed metabolism, physical deterioration, and not infrequently death.

The microscopical findings, supplemented by the chemical, are employed in determining the presence of undigested: 1, proteids; 2, carbohydrates; 3, fats; 4, connective tissue; 5, mucas; 6, pus; 7, blood; 8, bacteria; 9, protozoa; 10, paracites and their ova, and finally cellular elements, spiral cells, plant hairs, cellulose and many other things that have no relation to the stomach.

As the Ewald, Boas, or some modification of test meals is used in stomach analysis, the Schmidt test meal, or one similar, containing a definite amount of proteids, carbohydrates and fats is given for three days for an intestinal test meal. With the first and last, 10 grains of charcoal, or .3 grain of carmine is given to stain the feces, and indicate to the examiner that he is getting the feces he wants for examination. After inspection for the gross appearance visible to the eye, a portion is taken both from the exterior and interior of the mass, rendered fluid by the addition of sufficient water to make it spread rapidly upon the slide, and enough 5 per cent formaline added to the container (which is usually a large mouthed bottle holding about an ounce) to overcome the offensive odors caused by skatol, sulphuretted hydrogen, or the putrid odors of ulcerative processes. A drop from the fluid feces is placed upon the slide without further preparation, and a cover glass placed over it. It is first examined by a low power, about 2/3 objective, searching the entire field carefully for any objects that may challenge our attention, and if higher magnification is desired a 1/6 objective is used for a more critical study.

The stool should be natural, not that from a cathartic.

To recapitulate in the order named, search should be made for evidence of:

1. Proteid indigestion. Conclusive evidence of this may be shown by finding abundance of muscular fibers of meat or fish when only moderate quantities have been taken. Usually we find two or three small, partly digested, colorless masses in the field, without transverse stritation visible. But when we find them in bundles or masses with deeply yellow, or yellowish tint, with the ends square or slightly rounded, and both the longitudinal and transverse fibers distinctly visible, we have conclusive evidence of proteid indigestion, either from disordered function or possibly from an unusual amount ingested, a fact which can be ascertained by inquiry into the diet habits of the patient. The intestinal wall is unstriped, therefore there is no danger of confounding muscular tissue from food, with that of the intestinal wall resulting from destructive inflammatory processes there, no matter how much pus, blood, mucus and putrid odor may be present.

2. Carbohydrate indigestion is positively shown if free starch is found in the stools. Since thoroughly cooked carbohydrates are the most easily digested form of food and constitute such an important part of it in the shape of potatoes, beans, rice, oatmeal and the like, the empty cells may be found and occasional granules showing the concentric rings clearly defined, but any doubt as to the character of the objects may be dispelled by adding a drop of Lugol's solution to the preparation. The characteristic blue stain of all starches gives positive evidence of its presence, and often in surprising amounts.

3. Fats constitute one of the most important elements of food. It is important here too, to know the quantity taken to determine whether there is failure of absorption, due to increased peristalsis hurrying it along the tube; imperfect digestion, due to obstruction of the bile duct interfering with its saponification; or deficiency in the pancreatic enzymes which convert it into fatty acids and glycerine.

Normally over 90 per cent of the fats entering the body are absorbed.

If fats are converted into fat derivatives, such as fatty acids, soap needles, and insoluble compounds of magnesium or calcium crystals, they are lost to the body as food.

Fat globules show faulty digestion; soap needles and other forms, faulty absorption.

Neutral fat globules stain a beautiful yellow red or red color with Soudan 3.

Fatty acids and soap needles both appear as crystals, colorless, spindle-shaped, single or in sheaves, but are differentiated chemically.

If the slide is held over the flame of a bunsen burner until it boils vigorously, the fatty acid crystals melt into globules, which take the Soudan 3 stain showing a bright red color, and does not stain the soap or soap needles.

Magnesium soap crystals are large, highly refractive bodies, oval, or circular in shape, with broken granular centers which usually require 36 per cent. acetic acid to break them up and dissolve them and heating them as before, they appear in globular form like neutral fats.

Calcium soap crystals are the most resistant of all forms, requiring often glacial acetic acid to dissolve them. The sodium and potassium soap needles are more easily absorbed but all are irritants to the intestinal tube; and since it not only requires heat to dissolve fatty acid crystals into fat globules, but requires both heat and the addition of 36 per cent. acetic acid to dissolve calcium soap crystals, they are necessarily insoluble compounds that cannot be converted into food.

There is a practical suggestion to be made here of therapeutic value.

It has been a time-honored custom with us older physicians to dilute the baby's milk with lime water; and give milk of magnesia with milk to adults suffering from gastritis.

As soon as the fats of the milk reaches the intestine, it splits up into fatty acids and glycerine, the latter is absorbed, the former combines with the calcium and magnesium to form an insoluble soap. This is a waste of food. Sodium citrate, 5 per cent. strength, obviates this loss.

4. Connective tissue, if found in the stool, shows faulty stomach digestion, for it should be digested there.

5. Mucus is found in stools as the result of intestinal irritation or inflammation—small quantities not visible to the eye not pathologic. If from the small intestine it is well to remember it has no definite structure like vegetable matter. It is mixed with stool, bile stained and its gross appearance is like tapioca grains, and consists of cells of leucocytes; endothelial, oval, elongated, curved, cordate, spindle-shaped, embedded in a hyaline mass. In masses, with or without pus and blood, its origin is in the lower bowel and may be significant of any degree of irritation from fecal accumulation to cancer. Microscopical examination is unnecessary when found in quantities for mucus alone.

6. Pus may be discharged into the bowel from an abscess communicating with it, or from some destructive process of the bowel itself—distinguished from leucocytes in that leucocytes are mono-nuclear, while pus is poly-nuclear.

7. Blood. Unchanged blood, originating below the ileo-cecal valve is microscopic, the appearances depending upon whether it is from low down or high in the colon. Blood from the stomach, duodenum, or upper part of small intestine may be in such small quantities (occult blood) as to defy detection by the microscope, or in quantities sufficient to produce tarry stools. It requires about 500 c. c. to give typical tarry stools. The guaiac test, which is a legal test, is used, or the Benzidine test, a newer and far more delicate one, demonstrating blood in from 1/5,000 to 1/50,000 dilution, both positive, and used here as elsewhere for detecting blood in small quantities.

8. Bacteria. The bacteriology of the feces is complex and almost unknown. It offers an inviting field for future investigation, and will repay richly those who give their time and talent to research of the flora in this tropical zone. Infant bacteriology is especially important since the stools of infants contain one-third their bulk of bacteria. Over fifty varieties have been found—both aerobic and anaerobic, some helpful, some harmless and many pathogenic.

The Protozoa. The endameba is of interest to us in that we encounter it in persons who have been visiting tropical or semitropical countries. It is responsible for a very intractable form of dysentery which may last for years unless the cause is discovered, and often results disastrously by causing liver abscess, pyothorax and pericarditis on suppurative processes elsewhere.

The ameba when passed into a warm bed-pan and immediately transferred to a slide—(placing a hot nickel on it if you have no warming stage) is easily found with low power as a glistening, small mass, larger than a leucocyte, motile, changing form, putting out fingers, sometimes slowly, sometimes rapidly, and since it has been accused of being found in pyorrhea alveolaris in

(Continued on page 369)

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NOVEMBER, 1916

Editorials

SOCIAL INSURANCE.

Just what is meant by this term or what is included in it is not clear. While much talked about at present, few seem to comprehend what may be its meaning, or what it will supply to the community, or what its effect on either society or the medical profession will be. This status of the question is probably due to the fact that no concrete plan of insurance against illness and disability has been worked out, while at the same time the need of a systematic care of those unable to care for themselves and families is acknowledged by every one. The manner in which it may be done is still conjecture.

Whatever will finally come to be included under the name or the term, "Health Insurance," it seems morally certain that a social or health insurance in some form is coming, and that soon.

It is given out that during the coming winter at least twenty state legislatures will have bills presented to them relative to health insurance. That all of these bills will be of prime importance to the medical profession is evident.

The idea has, no doubt, come largely from England and Germany, where the common laborer is cared for in a different manner than is custom here. At first thought, enforced insurance would seem to be obnoxious to Americans, and we believe it is, but as thousands of laborers in America are of foreign birth and accustomed to foreign ways, we will be compelled to treat the subject as it is presented. The whole question savors much of paternalism, and paternalism is not American.

Whether or not we like it, the reality confronts us. The welfare workers have perhaps pushed the matter forward, and it will now remain for the medical fraternity to guard its rights and equities. State legislators have the habit of expecting either gratuitous or underpaid services from the medical profession, and if left to them and attorneys for the large corporations, medical services will be paid for on about the basis of European custom.

If health insurance for laborers is instituted, will it include insurance for the laborer's family, and will it provide maternity insurance? Both of the latter phases are of more importance to society than the health insurance for the laborer.

Such health measures, properly provided for, may have bearings on other questions of vital interest to the medical profession, such as free dispensaries, charity hospitals, etc. Whatever form these bills may take, our public relations committees, legislative committees and health insurance committees must be on the alert.

The medical fraternity has always and will always look first to the welfare of humanity, but it must at the same time look to the interest of its own members. Medical service rendered in the interest of social or health insurance must be amply paid for; furthermore, the beneficiary must be in the position of knowing that he is paying for this insurance and the services it brings, thus removing any suspicion of free service and pauperism—the curse of all nations.

NEW MEDICAL SOCIETY.

There has been organized in St. Louis a new national medical society, "The Medical Society of the United States."

This in itself is not so strange, since it seems to be the tendency of a considerable number of medical men, when they may not dominate the policies of a medical society of which they are members, to start a new society. Perhaps the idea is a good one. At least it possesses the advantage of airing and agitating about all the weak points in the machinery of medical societies, and may at the same time advocate new policies. We are informed that the new society advocates "fee splitting."

A couple of years ago another new society was organized, the principal object of which seemed to have been to belittle so far as possible those members of the profession who did not view the new organization favorably, by implying that they were ignoramuses, and condemning those who practiced "fee splitting" as unprincipled, notwithstanding the fact that a large per cent of the members of this society had promoted "fee splitting" by practicing it.

It is not surprising that we now have another new society, calling by implication the members of the first new society swine and other endearing terms.

We do not believe in "fee splitting," and have never advocated it; yet we do not see that it makes material difference to the patient who gets the money, as long as the patient receives the best service for which he pays. We believe that both the family physician and the surgeon should be paid, the family physician for his diagnosis, advice and responsibility, the surgeon for his operation.

What we fail to understand is why members of our county, state and national associations, when the policy of the societies do not accord with their ideas, begin to condemn their opponents, organize new societies, and tear up things generally, thus helping to defeat not only organized medicine, but also the benefits that could come from organization. If the policies of the official organization are wrong, why not work in the society to correct them? The majority will always finally be right.

The first society referred to is already in its decadence, principally, perhaps, if report be true, because many of its members continued the "fee splitting" practice. We think much more of a man who splits 50-50 and acknowledges it than we do of the one who condemns it, joins a fraternity and pledges himself not to split fees, and yet continues the practice surreptitiously.

The comical side of the situation is to see those who, without investigation, joined the society probably for selfish motives, and when a little unpleasant notoriety comes, hustle out and ask that their membership be discontinued.

HIGH COST OF PUBLISHING.

Along with the high cost of living comes an increase in the cost of publishing all periodicals. Our readers may not know it, but the cost of publishing THE JOURNAL has practically doubled during the last few months. In order to avoid a deficit at the end of the year, we are compelled to abandon some progressive features contemplated, including an increase in number of reading pages. When the members of the Association realize that their journal costs them less per member than the members of any other state medical societies pay for their medical journals, the reason for exercising economy in this period of high prices for paper and printing will become apparent.

The Journal of the Indiana State Medical Association.

* * * * * * * * * * *

The dues to the Indiana Association are now $4.00 per year. The dues to the Illinois Association are $2.50, and one dollar of this goes to the Medico-Legal fund. Incidentally the ILLINOIS MEDICAL JOURNAL contains about forty pages more reading matter than is contained in the *Indiana Journal.*

ABOUT MEDICAL JOURNALS.

To the Editor: In the June number of the Russian Review we comment on your excellent article on Pavlov, which appeared in the April issue of the *Medical Review of Reviews.*

A Russian physician desires to subscribe to five or six of the best medical journals in the United States. Which ones should we recommend to him?

31 E. 7th St., New York.

The Russian Review.

Answer by Editor.

* * * * * * * * * * *

If you are looking for monthly magazines devoted to general practical medicine, you can be supplied, but here it is necessary to be wary, for here we find the worst representatives of American medical journalism. Many of the official organs or state journals are unreadable, but there are two conspicuous excep-

tions: the ILLINOIS MEDICAL JOURNAL and the *Southern Medical Journal*. Of the independent monthlies, *Therapeutic Gazette* and *Interstate Medical* can be recommended to the general physician.

Medical Review of Reviews.

* * * * * * * * * * *

Thank you. This compliment, coming from so high an authority, we pass on to our readers, for it is the members of the Illinois State Medical Society who make the value of our JOURNAL.

MODERN HUMANITARIANISM.

The present era is permeated with a strong sentiment of opposition to cruelty in every form. On one hand we see the greatest philanthropic organization in the history of the world devoted to the relief of suffering in Belgium. Another aspect of this sentiment is the modern idea that crime is largely due to mental defect or disease on the part of the criminal. The refinements in the diagnosis of feeblemindedness enable the courts to separate these victims of heredity from the criminals due to vicious associations. But few communities are prepared to follow these offenders to the logical conclusion, viz., permanent confinement with self-supporting labor. If the present trend continues the prosecution, in addition to overcoming the "presumption of innocence," will also have to assume the probability that the culprit is mentally irresponsible!

A recent occurrence in the criminal court is *à propos*. A man 65 years of age was convicted of criminally assaulting a young girl. Being in poor health, it seemed probable that a prison sentence would be "for life." The judge therefore gave the prisoner his choice of prison or sterilization. He chose the latter and the operation of vasectomy with stripping of the spermatic veins was performed by the jail physician.

The papers announced that the judge assumed that the sterilization would prevent the patient from "disseminating disease." The fact that vasectomy does not interfere with sexual desire or intercourse, but removes the restraint due to the fear of procreation seemed to have been overlooked. Medical men were naturally anxious that no travesty on justice had been done. It seems probable that the operation will in time cause an atrophy of the testicles. Whether it will prevent the dissemination of disease time will tell.

RESULTS OF THE PHYSICIANS' EXAMINATION HELD BY THE STATE BOARD OF HEALTH, IN CHICAGO,

June 21, 22 and 23, 1916.

Physicians: Present, 287; passed, 229; failed, 50; incomplete, 8.

PASSED.

College.	Year of Grad.	Total No. Passed.
Bennett	1915	2
Chicago College M. & S. 1911(1), 1913(1), 1914(2), 1915(3)	1916(61)	68
Eclectic, Cincinnati	1916	1
Hahnemann, Chicago	1916	9
Jenner Medical College	1916	2
Loyola University	1916	25
Northwestern	1916	17
Ohio State University	1916	1
Rush	1915(1), 1916(36)	37
St. Louis University	1915(4), 1916(11)	15
University of Illinois	1915(2), 1916(46)	48
University of Louisville	1916	2
University of Pennsylvania	1906	1
University of Toronto	1910	1
		229

FAILED.

Bennett	1914(1), 1915(1)	2
Chicago College M. & S.	1915(1), 1916(9)	10
Chicago Hospital College of Medicine	1915	3
Detroit College of Medicine	1904	1
Hahnemann, Chicago	1914(1), 1916(1)	2
Howard Univ., Washington, D. C.	1914	1
Illinois Medical College	1910	1
Imperial University, Moscow	1895	1
Jenner Medical College	1915(1), 1916(2)	3
Loyola Medical College	1913(1), 1915(2)	3
Meharry Medical College	1913(1), 1915(2)	3
Minnesota Hospital College	1884	1
National Univ. of Arts and Sciences, St. Louis	1916	1
Northwestern	1916	2
Reliance Medical College	1911	1
Rush	1916	1
University of Illinois	1914(1), 1916(1)	2
University of Louisville	1913	1
		50

MEDICAL CORPS OF THE NAVY.

Legislation has recently been enacted which will provide for approximately 300 additional medical officers in the Medical Corps of the United States navy.

The pay ranges from $2,000 per year, with quarters or an allowance therefor, for assistant surgeons with the rank of Lieutenant, Junior Grade, to $8,000 with allowances upon attaining the grade of Medical Director, with rank of Rear Admiral of the upper half.

Applicants must be between the ages of 21 and 32 years, citizens of the United States, and must submit satisfactory evidence of preliminary and medical education. The examination for appointment in the Medical Corps consists of two stages, the first stage, securing appointment in the Medical Reserve Corps, and the second stage, securing an appointment as a commissioned officer in the regular Medical Corps.

After the candidate passes the preliminary examination he attends a course of instruction at the Naval Medical School. During this course he receives full pay and allowances of his rank, and at the end of the

course he takes a final examination. Two of these courses begin each year, one commencing about the first of October, and the second course beginning early in February.

The examinations are held in several of the coast cities in the United States, both on the east coast and the west coast, and also at Chicago, Ill.

Literature describing the Navy as a special field for medical work, and circulars of information for persons desiring to enter the Medical Corps, may be obtained by addressing the Surgeon General, U. S. Navy, Navy Department, Washington, D. C.

Public Health

THE NEW PUBLIC HEALTH IN ILLINOIS.

Gratifying Recognition of Recent Accomplishments of the Illinois State Board of Health.

From the report of the Committee on Recent Advances in Sanitary Laws, Organization and Practice, a report read at the annual meeting—1916—of the State and Provincial Boards of Health, we extract the following reference to work recently accomplished by the Illinois State Board of Health:

Illinois—Great progress has been made in Illinois by recent legislative enactments having sanitary significance. The state has been divided into five sanitary districts, over which a full-time health officer presides, under the direction of the secretary of the State Board of Health. This guarantees that each district will have a competent health officer continuously on duty, prepared to answer all calls, always in close touch with the State Board and available in emergencies. Among the duties of the district health officer, one of the most important is the organization of conferences or schools for local health officers in their various districts. Your committee considers this an excellent idea.

A state epidemiologist has also been provided for, acting under the direction of the secretary of the Board. He is to settle disputes in diagnosis and when epidemics occur he will be required to take charge of the infected community.

A Bureau of Sanitary Engineering has also been created and is rendering good service, particularly in typhoid fever outbreaks, establishing safe water supplies, educating the people how to prevent future infection and in other ways assisting to curtail the ravages of unnecessary diseases.

The free laboratory service of the Board has been extended and branch laboratories have been established at Chicago, Mount Vernon, Urbana and Galesburg.

Several of the laws passed by the forty-ninth General Assembly of Illinois, while applying only in a limited way to the public health, impose new duties on the State Board of Health. Notably, the law authorizing the establishment of tuberculosis sanatoria by special tax in counties provides all county sanatoria so created must meet the approval of the State Board of Health.

The State Board is also required to cooperate with the superintendent of public instruction and the state architect in establishing standards of sanitation for school buildings and condemning school buildings deemed unsafe.

The publications of the Board show careful supervision and are up to date. Altogether, Illinois has made wonderful progress, and the many commendatory remarks for the Illinois Board and its hustling and efficient secretary are well earned and appropriate.

ELIMINATION OF OTHER PRACTITIONERS UNDER NEW SCHEDULE.

Held for the First Time in October.

As previously announced in these pages, the Illinois State Board of Health has adopted a new schedule for the examination of drugless healers and midwives and the first examinations held under the new schedule took place in Chicago on October 10, 11 and 12.

Under the old schedule, the examination for drugless healers was made up of seven subjects. Under the new order of things, there are ten additional subjects, making seventeen in all. The old and new schedules compare as follows:

OLD SCHEDULE.	NEW SCHEDULE.
	I.—Anatomy.
	II.—Chemistry, Etiology and Hygiene.
I.—Anatomy.	III.—Physiology and Neurology.
II.—Chemistry.	IV.—Pathology and Bacteriology.
III.—Physiology.	V.—Physical Diagnosis, Ophthalmology and Otology, Pediatrics.
IV.—Pathology and Histology.	VI.—Gynecology, Laryngology and Rhinology, Medical Jurisprudence.
V.—Symptomatology.	VII.—Practice.
VI.—Hygiene.	

The questions in the seven groups of subjects were identical with those asked physicians who were examined at the same time. In fact, under the present arrangement, drugless healers and physicians are given the same examination, except that additional subjects are covered by those seeking license to practice medicine and surgery in all their branches. These additional subjects are: surgery, obstetrics, materia medica and therapeutics. The reason for this difference is that the law does not authorize drugless healers to practice operative surgery or obstetrics, nor can they use drugs or medicines internally in their practice.

The examination papers on the subject of "practice" written by other practitioners will be graded by selected members of the various schools of healing who have been engaged by the State Board of Health for this particular purpose.

Another departure from former customs in the examination of drugless healers is the requirement that these practitioners must meet certain educational standards, preliminary as well as professional. They are now graded on education and training as follows: Graduation from an approved high school with four-year course, 20 credits; graduation from an approved teaching institution with four-year course, 70 credits; other training or experience tending to qualify the applicant to practice the healing art, 10 credits or part thereof.

While the educational requirements are not yet so high as those enforced in the case of physicians and surgeons, they represent a very distinct advance over former years when there were no requirements whatever.

That the higher requirements will be effective in climinating a very large number of improperly equipped candidates is evidenced in the greatly reduced numbers who appeared for the first examination under the new schedule. At the last examination held under the old schedule there were 188 candidates present. At the first examination held under the new schedule there were but 42.

RAISING STANDARDS OF MEDICAL EDUCATION IN ILLINOIS.

At a meeting of the Illinois State Board of Health, to be held in Chicago on November 10, a resolution will be introduced and, in all probability adopted, providing for six years of medical training for all persons matriculating after January 1, 1917.

The resolution will provide that the sixth year of the medical course shall be a hospital interneship in a hospital approved by the Illinois State Board of Health. All graduates of the year 1922 and of all subsequent years must meet this requirement.

IMPORTANT DECISION RESTS UPON ACTION OF PHYSICIANS.

Illinois Will Be a Registration State With Physicians' Help.

FEDERAL OFFICIAL VISITS STATE TO DETERMINE COMPLETENESS OF BIRTH AND DEATH RECORDS.

ALL UNREPORTED BIRTHS AND DEATHS SHOULD BE REPORTED IMMEDIATELY.

MEANS MUCH TO THE SUCCESS OF PENDING LEGISLATION WHICH WILL BE OF BENEFIT TO PHYSICIANS.

During the last week of October Illinois was visited by an official of the United States Bureau of the Census, the object of his visit being to examine into the completeness of birth and death registration under the new law and to determine if Illinois is to be admitted to the registration area of the nation. Examinations of the tabulations of returns by counties was made and a careful check-up of delinquent areas was carried out.

The federal examiner found the records sufficiently encouraging to warrant him in making the statement that he would return to Illinois in January and that, at that time, he hoped the returns of births and deaths would be sufficiently complete—at least 90 per cent of all births and deaths—to permit the admission of the state to the registration area.

It now rests entirely with the physicians and the undertakers of the state to determine whether Illinois shall become a registration state or whether it shall continue to bear the stigma of remaining a non-registration state. The present birth and death law is a good one, and contains every essential feature needed for complete vital statistics. Neither this law nor any other birth and death law is self-operative.

The records examined by the federal official show that a number of physicians are delinquent in reports of both births and deaths, and it is to these physicians that the urgent request is made to make out and file all unreported births and deaths at once. A reasonable time will be allowed for compliance with this request, after which persistent violators of the law will be vigorously prosecuted. If Illinois is denied admission to the registration area, the blame will rest upon those physicians and undertakers who fail to recognize their duties to the public and to their professions.

* * *

The admission of Illinois to the registration area will remove a stigma which the state has long borne in the eyes of her sister states. This will not only be advantageous to the people as a whole, but will mean much to the medical profession, which is now looked upon by medical registration officials of other states as not sufficiently law-abiding to discharge simple duties imposed upon them by the birth and death registration law. Until Illinois becomes a registration state there can be little hope of extending reciprocal relations in medical licensure to states of the better class. None of the better states are willing to accept members of a profession so neglectful of simple duties.

At the coming session of the General Assembly legislation which is greatly desired by the medical profession will be sought. Among other measures will be an amendment to the Medical Practice Act, extending the privilege of reciprocity in medical licensure to the older practitioners of the state—to those licensed prior to July 1, 1899. We must go before the legislature with clean hands if we hope for success. Our hands will be anything but clean if we must acknowledge failure on the part of the profession of the state to observe the provisions of the birth and death registration law, which was primarily designed for the protection of the physicians' patrons and upon which must rest the intelligent public health work of Illinois.

Physicians who wish to see Illinois a registration state; who care to have the privilege of licensure reciprocity extended to all physicians, and who desire to assist in the extension of the reciprocity agreement to embrace a larger number of states, can contribute a great deal by seeing that all births and deaths which have occurred since January 1, 1916, and which

have not yet been recorded, be reported to the local registrars of the various communities immediately.

POLIOMYELITIS IN ILLINOIS.

A summary of the prevalence of acute anterior poliomyelitis in Illinois up to this time may be given as follows:

Cases reported July 1-October 28, 1916	875
Found not to be poliomyelitis	82
Cases of true poliomyelitis	793
Number of deaths from poliomyelitis	87
Death rate (percentage of cases reported)	10.97
Cases still under quarantine, October 28	90

During the last ten days of October there was another flare-up of cases of infantile paralysis in and about the city of Decatur. There were three cases in the city, with two deaths and three cases in Decatur township, with one death.

The striking increase in the proportion of deaths to the number of reported cases toward the close of October indicates one of two things: That the cases are not being reported and are being concealed, or that the disease has taken on a greater degree of virulence. The death rate in and about Decatur—50 per cent of the cases reported—is a rate more than 100 per cent higher than that noted in New York City during the summer.

For the benefit of health officers or physicians who labor under the impression that they are rendering their communities a benefit by concealing cases of infantile paralysis, the experience of a Wisconsin health officer may be related.

This health officer, with the approval of local physicians, concluded to conceal cases "for the good of the community," announcing the illness of five children to be due to some common ailment, although recognized as poliomyelitis. A sixth child became ill and several citizens became suspicious. They sent for the state health officer, who diagnosed the cases as infantile paralysis. An indignation meeting of citizens was held. The local health officer was driven out of town and the physicians who were a party to the concealment of cases were prosecuted. The business interest of the town suffered far greater losses after the discovery and the great notoriety of the nature of the case than if the cases had been reported and properly handled as they developed.

LOAN LIBRARY FOR HEALTH OFFICERS.

Plans are under way for the establishment of a loan library for health officers by the State Board of Health. The latest books on hygiene and sanitation will be found in this library, and will be sent at the request of the health official. Library cards and all details of the plan may be obtained on application to the secretary of the State Board of Health at Springfield.

T. B. NOTES.

Tuberculin is not a routine remedy, but one to be used in selected cases only, and with the utmost caution. Used properly it is the one best medical aid we have; used improperly it is the worst.

The onset of "idiopathic" pleurisy calls for a careful examination for a tubercular focus in the lungs.

Many obscure, indefinite findings and symptoms might be cleared up with a subscutaneous tuberculin test.

Rest is successful in the treatment of tuberculosis because, first, it lessens circulation and hence toxin absorption; second, it lessens oxidation and lowers temperature and so decreases tissue waste; third, it puts the diseased lung at rest; fourth, it rests the heart; fifth, it lessens cough and expectoration, probably because quiet decreases physical and pathological activity in the diseased foci; sixth, it encourages weight gaining; seventh, if properly managed, it helps to put the mind at rest.—Minor, *Medical Record.*

The temperature is the first and best guide for the use of exercise in tuberculosis.

A simple method of concentrating tubercle bacilli in sputum is: place 5 c. c. sputum in a 15 c. c. centrifuge tube, add 5 c. c. of a 10 per cent. sodium chloride solution and shake in a shaking machine, or by hand if none available, until it is a thin homogenous fluid as free from clumps as possible. Add 0.5 c. c. of gasoline and repeat shaking process until the gasoline is thoroughly emulsified. Centrifuge at a low rate of speed until the gasoline forms a supernatant liquid, immediately beneath which is a scummy layer in which tubercle bacilli will be found, if present in original specimen.—Krauss and Fleming, *Journal of Laboratory and Clinical Medicine.*

In all methods of treatment remember you are treating the consumptive and not consumption.

Climate is only an aid; it, in itself, never cured tuberculosis.

Fever is one of the first signs of tuberculosis in infants.

THE MICROSCOPICAL EXAMINATION OF FECES AND ITS CLINICAL SIGNIFICANCE.

(Continued from page 363)

from 20 to 47 per cent. of cases, the scrapings from the root of the tooth should be examined at the dentist's chair to determine their presence if they exist.

9. Parasites or their ova are found—the most common being the ova of the pin or thread worm, so often found in both adults and children. The eggs are colorless, oval, slightly flattened on one side, and filled with an embryo that can be seen with low power or high dry.

The ova of the Ascaris lumbricoides, the round

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Auto Sparks and Kicks

LUBRICATION.

CARBON TROUBLE.

J. G. C.: I have a small 1911 touring car which has given me trouble by excessive carbonizing in the forward cylinder. The carbon collects under the valves, prevents perfect seating and causes a consequent reduction in power in that cylinder. Cleaning with kerosene does not seem to help any, but grinding the valves of this cylinder improves matters for a while. The other cylinders do not seem to give trouble to the sene does not seem to help any, but grinding the valves tained by the splash system, the oil being fed to the crank case compartments by a small pump.

From the fact that it is only the one cylinder that gives you trouble, it is quite evident that this cylinder alone is receiving an excessive amount of lubricant. If there is no means of regulating the supply of oil to the individual cylinders, I would suggest that you grind or cut down the ridge or compartment that keeps the oil within its well under the forward crank. This will reduce the depth of the oil into which the forward connecting rod "splashes" and will prevent so great an amount from reaching the piston and cylinder. However, it would seem that the oil that you use is not of a very good quality, for otherwise there would be no carbon, or what there was would be in the form of a dry powder and would be blown out by the exhaust. I would advise you to confer with a reliable repair man or with the factory in regard to the brand of oil you are at present using.

AN OIL DANGER SIGNAL.

P. D. O.: Is there some device on the market that will automatically warn the driver when his lubricating system fails to operate properly?

The manufacturers of a foreign car have evolved a device by means of which the ignition of the motor is automatically interrupted whenever the oil level in the lubricator falls below a certain level. It is, therefore, impossible to operate the car without sufficient lubricant, and much damage that would otherwise be caused by a careless driver is thus prevented. This device is exceedingly simple and consists, in its essentials, of a small tube containing a float, the former being connected with the main oil reservoir. When this float falls below a certain point, due to the low level of the oil in the tank, a connection is formed which short-circuits the magneto, and thus stops the motor without damage to the ignition system.

ADVISABILITY OF DRAINING CRANK CASE.

P. S. C.: My car employs the circulating oiling system. Should the old oil be drained out and the reservoir cleaned, or is it only necessary to renew the oil supply as it is exhausted?

With the circulating lubricating systems in popular use, the same oil is used over and over again. While much of this may eventually be burned in the cylinders, it is probable that the lubricant will become "worn" before the reservoir is emptied. Consequently the level of the oil in the reservoir should not always be taken as the criterion by which to judge the condition of the lubricating system. Although a strainer is used to free the oil of all foreign matter as the lubricant starts on its return trip, it is the experience of many designers that the oil, if used too long, gradually becomes filled with minute particles of iron filings worn from the rings, piston, cylinder walls and bearings. If oil is used in this condition, the metal filings will act as an abrasive and will wear the very surfaces that the lubricant is supposed to protect. It is, therefore, advisable to replace the old oil with fresh lubricant several times throughout the season. If care is taken in this direction, the motor will give excellent service with this system of lubrication, and the wear of the moving parts will be reduced to a minimum.

HOW TO TELL THE BETTER OIL.

T. L. O.: Can I test the comparative value of two kinds of oil?

Another test, in addition to those already given in this department, constists of placing a piece of blotting paper on the hot cylinder head, or other heated surface, and dropping a small quantity of the different kinds of oil to be tested on it. By observing the comparative time that is required by the different drops to spread and dry up, you can obtain a good idea of the quality of the oil. As a rule, the best oil will be the last to dry.

LUBRICATING THE TIMER.

O. F. P.: I have driven my car 1,000 miles and have not as yet lubricated the brushes in the timer. I understand that it is advisable to do this, and I would like to know the best grade of oil to use.

Pure castor-oil is said to be well adapted for this purpose. Before it is applied, however, it would be well to clean out the old oil with gasoline.

THE MICROSCOPICAL EXAMINATION OF FECES AND ITS CLINICAL SIGNIFICANCE.*

(Continued from page 369)

worm, has a double shell, outer one brown and very rough, like cobblestones, the inner one, hyaline, with granular contents, which resists freezing and drying and can be kept in the laboratory for from two to four years.

Infection comes from ingestion of the ova, and develops in about three weeks.

The Angylostoma duodenalis, or hook worm, so common in the southern states, finds a host in our northern patients more frequently than we are aware of. Discovery of ova in the stools is the only positive method of diagnosis, and they exist as long as the patient entertains the worm. It is estimated that sometimes a million eggs a day are discharged by the patient. I have found as high as 15 to 20 eggs in a single slide from one drop of feces. The ova are egg-shaped, brownish shell and rather smooth. The worm is never found alive in the stools. They attach themselves to the mucosa of the duodenum and cecum by means of a pair of hooks, upper and lower. The hooks, when fastened, puncture the blood vessels and the mouth between them sucks the blood, producing a grave form of anemia with colic, diarrhea, weakness and dyspnea, until a few 30 grain doses of thymol followed by Epsom salts destroys them. Sometimes the treatment has to be repeated once a week until there are no eggs found in the stool. High leucocyte count of from 15 to 25,000 is frequent and eosinophilia is sometimes greatly increased—the color index is also lower. Don't administer castor oil or alcohol with purge after thymol, as it makes a poisonous compound. Oil of chenopodium is recommended in 15 grain doses for this and round worms as well, to be repeated in two hours and followed by purge.

The Strongyloides intestinalis and stercoralis is a very common affection in the south, and is often encountered in the north. It produces the Cochin China diarrhea, so-called. The embryo is about the same size as that of the hook worm, with the difference that they are hatched in the body, pass out, develop and deposit their ova in the stool. Diagnosis is made by finding the living worm in the stool.

More than ever before, intestinal parasites are recognized as playing an important role in intestinal diseases, and Prof. Overlander of Harvard, who was the first in this country to give a special course upon the subject, finds his classes increasing in numbers every year, as physicians are coming to recognize their value in the successful treatment of a class of cases hitherto not understood, and for which there was no relief.

Time will forbid further enumeration of the visible objects of interest to be found by you with a microscope, objects of scientific interest to the physician and of practical importance to the patient's welfare.

The microscopical examination of feces is not attended with anything revolting to the olfactory senses when formaline is used.

The discovery of evidence of indigestion and faulty absorption of either of these important elements of food, meat, starches or fats, is quickly and easily made and furnishes us with at least a suggestion of treatment—namely, the withdrawal of the article that is burdening the digestive function. Allow the mechanism to rest if overworked, and ascertain by other means at our disposal the source or seat of existing disease. The primary examination of feces for the general practitioner is practical, and the discovery of undigested elements of foods leads to further inquiry as to its cause and treatment.

Society Proceedings

ADAMS COUNTY

The October meeting of the Adams County Medical Society was held October 9, at 8:30 p. m. In the absence of the president, Dr. A. M. Austin acted as temporary chairman. Twenty members and guests were present.

Dr. C. D. Center, councillor for our district, brought up a matter of grave importance to the members. After much discussion the same was referred to a committee consisting of Drs. Christie, Koch and Reticker. Chairman Christie made his report and the matter was referred to the medico legal committee.

The transfer card of Dr. F. O. Morgan was received and turned over to the Board of Censors.

Dr. C. W. East of Galesburg, district health officer, read a complete, practical and interesting paper on "The Clinical Diagnosis of Acute Anterior Poliomyelitis." After Dr. East had answered numerous questions and his paper had been thoroughly discussed, Dr. Koch moved that a rising vote of thanks be given him. The same seconded and carried.

Adjourned to meet the second Monday in November.

ELIZABETH B. BALL, Secretary.

COOK COUNTY

CHICAGO MEDICAL SOCIETY.

Regular Meeting, October 4, 1916.

1. Surgical Considerations of Splenectomy and Results. Wm. J. Mayo, Rochester, Minn. Discussion by A. J. Ochsner, Arthur Dean Bevan, Allen B. Kanavel, Nelson M. Percy, Maximilian Herzog and Joseph L. Miller.

Memorial night in honor of the late John B. Murphy, October 11, 1916. Program: Reading of messages from prominent physicians and surgeons of the United States.

Following is a list of the speakers of the evening: Geo. A. Crile, Cleveland Ohio; L. L. McArthur, E. Wyllys Andrews, D. A. K. Steele, Arthur Dean Bevan, Wm. E. Quine, Chas. A. L. Reed, Cincinnati, Ohio; Frank Billings, A. J. Ochsner, Jacob Frank, Wm. A. Evans.

Regular Meeting, October 18, 1916.

1. Concerning the Modern Aspects of the Cancer Problem (Demonstration of patient). Gustav Kolischer. Discussion, Emil Ries.
2. Pathological Studies of Bone and Joint Tuberculosis. D. B. Phemister.
3. Prevention of Disability following Fractures of Oscalcis. C. R. G. Forrester. Discussion by John L. Porter, Hugh McKenna, Wm. Hessert, Chas. M. Jacobs, Frederic Test and A. B. Rankin.

Regular Meeting, October 25, 1916.

1. Prevention of Disability following Fractures of Oscalcis. C. R. G. Forrester.
2. Osmosis and Dialysis in Its Relation to Medicine and Surgery. Ed. H. Ochsner.
3. Simple Glaucoma of the Atypical Type. Harry S. Gradle. Discussion, George Suker.
4. Conservative Nasal Surgery. Oliver Tydings. Discussion, John A. Cavanaugh.

Regular Meeting, November 1, 1916.

1. Examination of the Discharge in Mastoid Disease. Albert H. Andrews. Discussion general.
2. The Percy Cancer Treatment in Nose, Mouth and Throat. Joseph C. Beck. Discussion, James F. Percy, Galesburg, Ill.
3. The Diagnosis of Early Pulmonary Tuberculosis. George Halperin. Discussion, John Ritter and Willard Dicker.

ENGLEWOOD BRANCH

The opening meeting of the Englewood Branch was held Tuesday evening, October 2, 1916. The meeting was called to order promptly at nine o'clock by the president, Dr. W. H. Buhlig.

Dr. G. J. Hagens, our outgoing president, was presented with a leather bound copy of Vol. 8 of the *News Letter*, representing the work done by the branch during his term of office.

The following program was then presented:

Acute Anterior Poliomyelitis. Medical aspect, Dr. E. J. O'Neill; neurological aspect, Dr. H. G. Hardt.

Dr. O'Neill gave us a very interesting paper, bringing the subject right up to date.

Dr. Hardt considered the subject from the neurological aspect, showing many stereoscopic slides, illustrating various deformities before and after operations.

The discussion was opened by Dr. Julius H. Hess, who gave us some interesting data on the New York epidemic. His classification takes in three types, namely, the abortive, the cerebral and the bulbar-spinal. He spoke at length on the diagnosis, especially in the pre-paralytic stage and gave us many valuable points. The serum treatment, he stated, had not been found encouraging at the Cook County hospital.

Dr. H. B. Thomas discussed the subject from the orthopedic side, giving us valuable pointers on the treatment of the disease during the acute and later stages. He stated that fully thirty per cent of the operative cases could have been avoided had careful treatment been instituted during the acute sickness. During the acute stage he recommends absolute quiet. Protection first and second position support the weak side. Massage after tenderness is gone, three to four days, later passive motion, later active motion and muscle training with exercise after two or three weeks. Operation should never be done until after two years.

Dr. Schick of the Cook County hospital gave us interesting data on the cases under his care (as intern), basing his remarks on personal observation and study of the cases.

Dr. E. K. Armstrong gave us a most interesting talk, especially regarding the Chicago cases, all of which he had the opportunity to observe and study. His words were based on close personal observation. His discourse was greatly appreciated.

The attendance was 88.

ARTHUR G. BOSLER, Secretary.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

The regular monthly meeting of the Chicago Laryngological and Otological Society was held April 18, 1916, with the president, Dr. Otis H. Maclay, in the chair.

CASE OF HIGH DEGREE OF RETRACTION OF THE POSTERIOR HALF OF THE DRUMHEAD AS A CONSEQUENCE OF OLD ADENOIDS.

Dr. J. Holinger demonstrated a boy, M. H., 16 years old, who complained of hard hearing, dizziness and noises in both ears for the last two years. Neither ear ever discharged. Large quantities of ear-wax and epidermoidal scales were removed from both ears, especially the right, where they were anchored in the region of the posterior upper quadrant of the drum-membrane. Both membranes were considerably retracted. Hearing distance in right ear, one meter from whisper; left, three meters. In catheterization the air entered with a soft sound in the right ear, and with a harsh (normal) sound in the left ear, after which the aspect of the right drum membrane was as fol-

lows: Anterior half normal; posterior half shows highest degree of retraction. Membrana flaccida shows reflex of a cover. Handle of hammer in normal position, but posterior half of membrane tightly adherent to inner wall of middle ear. Short process quite prominent, and a high posterior fold extends from it, sickle-shaped, to the posterior margin. Depressing the speculum downward and forward, one is able to look underneath this fold into a bag-shaped excavation of the membrane, extending into the aditus ad antrum. On the inner wall of this bag the long process of the incus, the stapes, and, extending horizontally backwards, the tendon of the stapedius muscle are clearly visible. The atrophic adherent part of the membrane is drawn tightly, like a glove over the hand, over all these parts. The left membrane is normal. Considerable masses of adenoids and the tonsils were removed. Hearing improved in both ears, in the right to four meters, in the left to over seven meters for whisper. Dr. Holinger's explanation of the condition is that there is in the right ear one of the consequences of adenoids. Through absorption of air in the antrum the cells of the mastoid, the membrane, became first retracted, then in the posterior half adherent, and extended bag-shaped into the aditus ad antrum, thus overlapping and later on replacing the normal lining by epidermis. Masses of epidermis gathered in the bag, and there is the beginning of cholesteatoma. The most forcible inflation through the catherer gives subjective relief, but does not change the picture. Had the speaker had a chance to remove the adenoids a year or so ago, normal conditions might have been obtained, as secured in the left ear, but now the boy is a chronic invalid.

DISCUSSION.

Dr. George E. Shambaugh asked Dr. Holinger whether he considered the condition of the drum membrane the result of reaction alone, to which Dr. Holinger replied yes. Dr. Shambaugh said his impression, after examination of the case, was that of scar formation in the upper posterior quadrant. The most extreme form of retracted drum membranes encountered in the non-suppurative types of middle ear troubles presents a condition where the handle of the hammer is entirely obscured, drawn up under the posterior fold. In the case demonstrated by Dr. Holinger the manubrium is still visible. The formation of a cholesteatoma in the pocket formed in the upper external margin is the most interesting feature and throws additional light on the method of formation of this clinical condition. It is apparently always due to the accumulation of desquamated epithelium and develops, as a result, from epithelium which has invaded the middle ear cavities. The speaker has seen a large cholesteatomatous mass filling the inner third of the external meatus, where there has been no perforation into the middle ear. Dr. Holinger's case resembles rather closely cases of cholesteatoma developing in the attic, the origin of which has been cleared up by the work of Bezold. The membrana flaccida is very often sucked in against the neck of the hammer, to which it becomes adherent. It becomes very easily torn and in this way forms a portal for entrance of epithelium into the attic. This eventually results in a cholesteatomatous formation.

Dr. Norval H. Pierce thought the pathology in the case presented had to do with the very keynote of the pathology of the middle ear. His understanding of the process of formation of cholesteatoma in this type of cases, as described by Bezold, is that the Eustachian tube becomes closed. He asked Dr. Holinger if the tube was permeable in the case demonstrated, to which Dr. Holinger replied yes. Dr. Pierce then asked if he could see the location of the adhesions, to which Dr. Holinger replied that the anterior part of the membrane is covered, but not the posterior. Dr. Pierce said Politzer claims in all these cases that there is an absolute shutting off of ventilation from the part of the ear affected —not necessarily in the Eustachian tube, but somewhere in the cavum tympani. The theory is that the oxygen is absorbed and carbonic acid given off by the mucous membrane in the cavum. It is well known that carbonic acid is a great stimulus to muscle fiber and probably in these cases this surplus carbonic acid contributes to the abnormal contraction of the tensor tympani, adding to the retraction of the tympanic membrane. Two entirely dissimilar otoscopic pictures are presented by these cases: One in which the manubrium mallei is in an approximately normal position as regards its lateral relations, the other in which the manubrium is greatly foreshortened or scarcely visible in advanced cases, it having been retracted inwards and upwards toward the Eustachian tube orifice. Cholesteatoma are more likely to form in the former class of cases. Atmospheric pressure remains the same in the external auditory canal—sixteen pounds to the square inch, which produces pressure atrophy. This pressure atrophy has its greatest effect on the least resistant portion of the membrane—Shrapnell's membrane. Before cholesteatoma can occur in these cases we must have a perforation, which perforation occurs in Shrapnell's membrane as an end result of pressure atrophy. After perforation occurs the epithelium from the external auditory canal and the tympanic membrane crosses through the perforation and into the aditus and epitympanic space. These are the cases of adhesion in these early stages that recently have attracted attention—in New York especially. Considerable benefit to hearing has been claimed from mobilizing the handle of the malleus from the promontory. An incision is made below the long handle of the malleus and with a ring encircling the malleus the adhesions are broken up. Dr. Pierce's experience has led him to believe that it is impossible to permanently mobilize these cases, and in cases of threatened cholesteatomatous formation it is a question in his mind whether ossiculectomy is not advisable. He has been able to remove the cholesteatoma in a couple of instances by injecting salt solution under the periosteum of the external auditory canal.

Dr. Holinger, in closing the discussion, said that the difference between the condition present in his case and that reported by Dr. Shambaugh is in the fibers of the membrane extending downward and forward from the end of the handle of the mallet. If these fibers are strong enough to withstand the traction of the tensor tympani muscle, the handle of the mallet will remain in place; if not, or if there is a perforation of the light cone, the handle will move upward and backward. In his case these fibers saved the anterior half of the drumhead. The posterior half became retracted, atrophic, adherent and formed what Bezold called a "cholesteatoma of the external meatus."

MASSAGE OF THE EUSTACHIAN TUBE.

Dr. Alfred Lewy believes, after a limited experience with it, that the method of massage of the Eustachian tube, as advocated by Mink, of Utrecht, Holland, will prove a valuable addition to our therapeutic resources, but realizes that it is useful only in properly selected cases, as an addition to, not a substitute for, other well-established procedures. The technic is easily carried out by anyone familiar with the use of the Eustachian catheter. A nasal applicator is curved to about the same degree as an Eustachian catheter, but a shorter segment used. A number of different lengths of curves are necessary to fit septal deviations and various anatomic conditions. Mink uses a wire looped back on itself in opposite directions at either end, and

curved to fit individual cases. One end serves as handle, the other as a cotton carrier. The cotton is best folded back on itself and wound around the carrier so as to form a thick ball rather than a brush, to avoid trauma. After cocainizing the region of the mouth of the tube, the cotton-wound applicator is passed back to the posterior wall of the pharynx, swept upward in the fossa of Rosenmueller, brought forward over the mouth of the tube and immediately downward and back under the mouth of the tube. This motion is repeated about twenty times, or as often as the operator's judgment indicates. Mink calls this the "greater stroke." Another, the "lip stroke," is as follows: The applicator is rotated upward and backward into the mouth of the tube, as is done in passing the catheter directly in. This dilates the mouth and exercises the muscular and other attachments. Still another movement is the "small stroke," which is reserved for cases in which he is unable for any reason to circle the mouth of the tube. This stroke is up and down in front of the tube. The cotton should be in fairly firm contact with the tissues throughout the movements.

Mink does not describe the use of medicaments in connection with the massage, but in the cases so treated Dr. Lewy has used argyrol, 20 per cent; iodoglycerine, ½ per cent, and ichthyol, 10 to 20 per cent.

Dr. Lewy has used this method in 6 cases of acute suppurative otitis media, massaging with argyrol when the acute symptoms had subsided and they were in the declining or stationary stage. He believes these cases were shortened in their course, and hearing restored more rapidly than with simple inflation and topical applications, as heretofore used. Three cases of simple tubal catarrh of moderate degree yielded to a very few treatments. So far he has had no special results from this treatment in tinnitus that failed to yield to other treatment, but feels a little encouraged in some cases. The treatment seems especially useful to remove the results of tubal inflammation in cases of not too long standing.

DISCUSSION.

Dr. J. Holinger referred to the epidemic of influenza of last winter, which was combined in a great many cases with middle ear suppuration and affection of the Eustachian tubes, in many of which there was more or less retraction of the drumhead and very distressing subjective noises. He had not had the courage thus far to massage the tubes directly. The question in his mind has always been, Is it probable that we accomplish more in these cases by an active treatment than by waiting? Therefore, he welcomed the paper, because it showed that with the careful technic described Dr. Lewy did not see very much result and the other members need not expect much more from their endeavors. The work that has been done so far with the naso-pharyngoscope in these cases is very promising of further success.

Dr. Joseph C. Beck, since examining the Eustachian tube with the naso-pharyngoscope, has seen a recess behind the posterior lip of the Eustachian tube that was never visible to him before, by mirror examination. After acute or chronic inflammation of the naso-pharynx there is an infiltration in the muscles of the tube, so that the normal action does not take place, and then by this massage action, sweeping around these three different strokes, normal action may be brought about. Too little attention is paid to the Eustachian tube, particularly to the muscular apparatus of the tube. He thinks the result oftentimes obtained by the removal of the tonsils is due to the change produced on that little muscle which comes from the palate that goes around the Eustachian tube opening. Massage improves the chronic cases temporarily, but when left alone the condition returns. The result is on the muscle apparatus more than anything else.

Dr. H. Kahn thought the method of massage described by the essayist was novel. Ten or twelve years ago Urbantschitsch massaged the Eustachian tube by passing an Eustachian catheter through which a celluloid bougie was inserted, and then with a backward and forward movement of the bougie five, ten or fifteen times, as desired, hyperemia was established and adhesions were also broken up. Urbantschitsch also practiced a backward and forward massage of the nose, with a mechanical vibrator, which reached back around the end of the tube through the length of the lower meatus of the nose. This vibrator was armed with cotton and an oleaginous substance and rubbed the lower end of the turbinate. The speaker could not see that the method does anything more than establish a hyperemia or make a post-nasal application in a definite way.

Dr. Robert Sonnenschein, in closing the discussion for Dr. Lewy, said that pneumo-massage may be applied to the Eustachian tube by passing a catheter and connecting the tip of the massage apparatus to it. It is difficult to say whether it is the induced hyperemia or the exercise of the muscles which aids the ears.

DIFFICULTIES AND COMPLICATIONS OF SPHENO-PALATINE GANGLION INJECTION.

Dr. Harry L. Pollock said there are three general indications for the injection of the ganglion: (1) True spheno-palatine syndrome (Sluder), in which there is pain radiating to any or all parts supplied by the ganglion. Usual location of pain is over root of nose, in and about eye, over frontal region, in the ear, back of mastoid and radiating down into the neck and arms. (2) Hyperesthetic rhinitis. (3) Post-operative neuralgia, secondary to operations upon the accessory sinuses of the nose.

Technic of Operation: With a straight Sluder needle, transfix posterior end of middle turbinal, press upwards, outwards and backwards until needle is felt entering the pterygo-maxillary fossa, where the ganglion is located; inject eight to ten minims of 2 per cent carbolic acid in alcohol.

Difficulties of Injection: (1) Absence of normal landmarks by having turbinate removed. (2) A deflected septum, split anterior cartilage, spurs and ridges. (3) Thickness of superior maxillary bone, which forms anterior boundary of fossa in which ganglion lies.

Complications: (1) Severe hemorrhage, either primary or secondary. (2) Paresis of external rectus by alcohol escaping into orbital cavity and attacking abducens nerve.

Conclusions: The injection of the spheno-palatine ganglion is usually carried out without any difficulties. The difficulties are in a majority of the cases overcome if one is familiar with the regional anatomy. The complications are not numerous nor severe, but one must be watchful and bear in mind that they occur, and be prepared to meet the emergencies as they arise.

DISCUSSION.

Dr. Robert Sonnenschein reported briefly a case in which there evidently was a dehiscence of bone covering the ganglion. The patient, a woman of thirty years, for years had the typical syndrome of Sluder. The upper teeth had been removed on the theory that they caused the neuralgic pain. Touching the region below and back of the middle turbinate caused a severe paroxysm of pain, while application of cocaine relieved the latter. Applications of dilute formalin were then made (beginning with 0.1 per cent) for several weeks, with practical disappearance of the pains for two years. They then recurred to a light degree, but were again dispelled by a few formalin applications.

Dr. H. Kahn was particularly interested in the mechanism of cocaine when applied in this region—the posterior end of the middle turbinate—and about the region of this ganglion. Why does the cocaine act? There must be some intimate connection of the outside with the inside.

Dr. Beck said results had been obtained in other cases, but they were best where the cocaine was used.

Dr. Kahn said he would like to know the mode of action of the drug.

Dr. Norval H. Pierce reported a case of a man, a highly nervous and imaginative individual, who suffered from ethmoid cases and the arm pain, which, however, was not neurotic in character. Dr. Pierce told this man that he had recently seen such cases treated by this method of injection and said that if he would consent to the experiment he would be glad to try it. The man readily agreed. Dr. Pierce was quite sure he did not get beyond the periosteum in this case, but the man said he was greatly improved, insisted on another injection, which was done in the same manner, in the same dense bone, after which the man said he was practically all right. Dr. Pierce did not feel that he could ascribe the effect to the injection of the ganglion. He wished to speak of the copious initial hemorrhage.

All these cases of vague pain in the head and strange abnormalities of vision are almost always connected with instability of the nervous system, which, on this account, are probably often benefited by any extraordinary method of operating. Great care should be used before drawing fixed conclusions in these cases.

Dr. Louis Ostrom, of Rock Island, had seen Sluder work, as well as a few others, and had noticed what he considers a neglect of detail of technic that is not permissible in other work, namely, leaving air in the needle to an amount equaling seven drops of water. He has seen trouble following spheno-palatine injections and has felt that it was due entirely to this neglect.

Sluder has his patient in the upright position. The speaker thinks it is not an easy matter to make an injection with a movable head and know just exactly the force you are applying. If the patient is in the recumbent position you have absolutely physical control of the situation. Dr. Ostrom also believes more restriction should be placed on just exactly the location of the injection and what the posterior end of the middle turbinate means. There may be a very large tip of the posterior end.

Dr. Joseph C. Beck thought the most important part is the effect of the alcohol on nerve tissue and neighboring nerves. The sphenoidal fissure and pterygo-maxillary fossa are in close proximity and so is the sphenoid sinus, to a number of nerves, particularly the optic. These injections are very frequently made without any regard to vision and the question remains to be answered as to what effect alcohol has on the various nerves. Dr. Beck could say frankly that the results from these injections are uniformly poor. They are not lasting. Many of them are failures, especially those done for vague pains in the head. Quite a few have been benefited, but he has not seen any striking results, such as he has heard reported by others. The condition is apt to recur, because you do not get a destruction, as in the case of osmic acid. There is only temporary destruction of the neurons or part of them, which is followed by reformation of the structures.

The question of hemorrhage is important. Care must be taken not to injure that branch of the posterior pharyngeal that goes down in close proximity to the spheno-palatine ganglion.

Dr. J. Hollinger has injected the ganglion in three cases and could never observe much benefit.

Dr. Pollock, in closing the discussion, said he had had some good results from this method, but, uniformly, the results have not been so good as he would like them to be. In answer to Dr. Kahn's question as to why the application of cocaine in this region results in temporary cure of the patient, or relief of symptoms, the cocaine has a very strong penetrating effect on mucous membrane and the spheno-palatine is in that neighborhood. He tries to put the cocaine up against the spheno-palatine foramen. There is an opening in the bone in the posterior wall and there is nothing but a little mucous membrane to penetrate.

Dr. Pollock did not wish to be understood as saying that when a patient comes with these pains the spheno-palatine ganglion is injected immediately. That was not the idea of the paper. The injection is a sort of a measure of last resort.

Regarding Dr. Ostrom's remark about the head being movable Dr. Pollock always has a nurse to support the head. In very difficult cases he gets a hammerlock on the patient. A great deal of force has to be used in most of these cases, because the bone is sometimes so thick that even with a hammer you cannot drive the long needle into the bone. He does not think there is any danger of using too much pressure, because you can feel that by your pressure sense. It is just the same feeling as in penetrating an antrum.

Regarding Dr. Beck's reference to the effect of alcohol injection upon the different nerves the speaker has had no experience in this line.

As to results, in a large number of cases relief was experienced. All cases of hyperesthetic rhinitis got relief and a large percentage of the neuralgias were benefited.

CHICAGO LARYNGOLOGICAL AND OTOLOGICAL SOCIETY.

Regular meeting held May 22, 1916, with the president, Dr. Otis H. Maclay, in the chair.

CASE OF INCREASING LOSS OF HEARING, LEFT-SIDED FACIAL PARALYSIS, HOARSENESS, TUMOR IN RIGHT PAROTID REGION, HEMIATROPHY AND PARESIS OF LEFT SIDE OF TONGUE.

Dr. Norval H. Pierce presented a man, aged 61, who consulted him because of difficulty in hearing on left side. Tuning-fork tests: Left—Weber-Schwabach, 25 seconds, lateralized to the left ear; Rinne, 10 seconds osseous conduction, and 27 seconds aerial conduction. Right—15 seconds osseous conduction, and 45 seconds aerial conduction. Low tone limit on both sides, G^2 (24 vibrations a second). High tone limit on both sides decreased, but more so on the left side. Whisper heard on left side at four to twelve inches, including high and low-pitched words. Right, ten inches to three feet. The same type of disease is present, therefore, in both ears, a type that has been named by Bezold as dysacusis—both the middle and internal ears being involved. There is also a facial paralysis on the left side, and a tumor in the right parotid region, which tumor was immovable from the deeper structures. Only the skin was movable. The tumor was hard and somewhat nodular. The tongue

showed a hemiatrophy on the left side, and in projection was directed to the left side. Hoarseness was also present, and examination revealed an adductor paralysis of the left vocal cord.

The speaker's analysis of the case is that the tumor is probably a so-called mixed tumor of the parotid, which is a very curious kind of tumor, affecting the parotid and the submaxillary glands, most frequently the parotid—about 71 per cent parotid, and the rest submaxillary. In the early stages these tumors are movable within the parotid tissues; are somewhat nodular and covered with well-pronounced limiting membrane or capsule, from which capsule strands of connective tissue are thrown into the tumor tissue, forming lobules. Their microscopical character has been the source of a good deal of controversy, some claiming that they are derived from connective tissue elements, others that they are derived from the endothelium or epithelium elements. Inasmuch as they contain fat, cartilage and sometimes bone, the speaker believes that Volkmann's theory that they are of embryological origin is correct. Their peculiar histology is that the tumor proper is composed of cylinders formed in epithelial or endothelial cells, columnar in character. The embryological displacement theory is substantiated in the case presented by the fact that some time ago the man had a tumor removed from his neck, which the surgeon told him contained hair—in other words, a dermoid, which is derived from a embryonal matrix.

The facial paralysis is due to involvement of the facial nerve on that side by the tumor. The hypoglossal involvement is due also to involvement by the tumor as the nerve passes down the retromaxillary fossa. The tumor has nothing whatever to do with the nerve of hearing or the hearing apparatus other than that it is encroaching upon the external auditory canal and closing it. This opinion is further strengthened by the fact that the same type of disease is present on both sides.

The disease of the larynx is an entirely different affair, and is probably due to some trouble within the thorax, although a somewhat superficial examination did not disclose anything wrong in the way of a large aneurysm.

Wassermann was negative in the case.

In the speaker's opinion, the treatment of the tumor is of little value. It is probably undergoing a malignant change, as such tumors are very liable to do. When such change takes place, there is very little to be done in a surgical way. X-rays could be tried. The type of hardness of hearing present is uninfluenced by treatment.

CASE OF PREVIOUSLY EXISTING ETHMOID LABYRINTH SUPPURATION WITH POLYPOID TISSUE, WITH PROBABLE INVASION OF THE ORBIT BY A MALIGNANT PROCESS.

The patient is 56 years of age. He was held up and struck on the head 5½ months ago. He has a discharge from the left side of the nose, with symptoms of nasal stoppage. After the trauma a neuralgia developed in the upper and lower branches of the fifth nerve, which was especially marked over the frontal division of the nerve. Ten weeks after the injury he had an operation on the supraorbital nerve, it being dissected out from the supraorbital foramen. For a time following this operation he was better. Then the pain recurred, and at present is as bad as ever. Double vision has developed gradually; at present he sees double when the object is downward and to the left. Examination of the eyes reveals the fact that the inferior oblique is involved. The eyeball is slightly raised above its fellow. There is an enlargement over the left cheek (malar bone). Examination of the nose reveals polypi, which have been removed several times. Their removal was accompanied by a very profuse hemorrhage.

The question is, what has occurred to this man? He evidently had the ethmoid disease long before the accident. X-rays show a shadow in the region corresponding to the left frontal sinus, left maxillary sinus and left sphenoid. Is it a case of malignant growth beginning after the injury to the skull? Is it an inflammation of the structures of the orbit from the previously existing ethmoid disease, or is it a hemorrhage at the base, which has come on after the injury or at the time of the injury, and is now just becoming organized and causing pressure on the nerves at the base? Examination of the tissue taken from the nose showed nothing malignant.

Dr. Pierce's diagnosis is: Previously existing ethmoid labyrinth suppuration, with polypoid tissue, and a very strong likelihood of an inflammatory or malignant process now invading the orbit. Glaucoma might also be thought of. However, the tension of both eyes is about alike, and the eye grounds are normal. The case should be very carefully weighed before attempting anything in the way of operation. However, whatever is done should be done externally, in Dr. Pierce's opinions.

DISCUSSION.

Dr. H. Kahn had seen the second patient about two months ago, at which time he had removed a large number of very large polypi. The hemorrhage was very alarming after the first sitting and he was kept at the hospital. The symptoms apparently improved. At this time double vision was not present. A day or two following the first operation a piece of the middle turbinate was removed anteriorly and the ethmoid opened, which was immediately followed by a great gush of pus. There was also quite a disconcerting hemorrhage following this operation. Then the man was let rest again. From day to day, in the course of a week, Dr. Kahn tried to clean up the etimoid. Dr. Snydacker examined the eyes during this time and the speaker was of the opinion that he made a diagnosis of superior rectus involvement and beginning glaucoma in both eyes, with a cupping of the discs. When the man was under Dr. Kahn's care there was not such a pronounced proptosis as at present. Of one thing Dr. Kahn felt pretty sure, namely, that there was no malignancy reported. So far as he could determine at that time, the whole thing most likely lay within the ethmoid, but what the exact condition is he could not say.

Dr. Robert Sonnenschein said that at the request of Dr. Kahn he had had the privilege of seeing the second patient and also the x-rays. He had simply examined the man's nose, without cocaining him, and felt that it was a question for further investigation. But, as Dr. Pierce had said, if anything were done in the way of radical procedure, an external operation would probably be the thing desired.

Dr. J. Holinger asked as to the condition of Steno's duct in the first case. He wondered if there was any abnormal discharge or composition of the saliva?

Dr. Pierce said the discharge was no more than normal. It had not been examined chemically.

Dr. Holinger asked as to the condition of the naso-pharynx in the second patient. He thought it would be a favorable case in which to make the examination of the post-nasal space demonstrated in Champaign. If Dr. Kahn could do so he would like to have him tell the society whether there had been any progress of the condition.

Dr. Kahn said there seemed to be more enlargement; at any rate, it seemed to him that there was more proptosis than when he had seen the man before.

Dr. Maclay asked as to the condition of the nose at the present time; whether there was any return of the former condition.

Dr. Kahn replied that he had not examined the man for some time.

Dr. Pierce said there was a return of the ordinary mucous polypi.

Dr. Pierce, in closing the discussion, said that all knew that a sarcoma or carcinoma of the ethmoid cells may be accompanied by the ordinary myxomatous growths that are indistinguishable microscopically and macroscopically from the growths that accompany the ordinary purulent inflammation of the ethmoid labyrinth. (Note: August, 1916, on operation, carcinoma involving the ethmoid and orbit was proven micoscropically.)

PAPILLOMA OF THE RIGHT VOCAL CORD.

Dr. Robert H. Good showed a young girl, aged 17, who had had a papilloma on the right vocal cord, which remained after several operations. The cord was thickened, especially the ventricle band, and the cord itself was reddened. When the patient phonated there was but slight movement of the cord. The patient had been in the Cook County Hospital since last September, and had had a number of operations for removal of the papilloma while there. She came to the speaker three months after the last operation, and had not been able to speak above a whisper for a year. Dr. Good used fulguration and sesquichloride of iron, 10 per cent. He first fulgurated for ten minutes, combined with the sesquichloride of iron, and to his surprise one week later she was able to talk some. He has kept this up, and now she can sing. Dr. Good learned of sesquichloride of iron being used in this way in Edinburgh in Turner's clinic, so thought he would try it, and certainly it has done wonders. The little papilloma has gone and the right vocal cord moves well now.

CASE OF DOUBLE DACRYOCYSTITIS.

This patient was a young woman. Only one side had been operated on by Dr. Good, by the Yankauer method, removing the anterior end of the inferior turbinate. First he put in a grooved probe through the lachrymal duct, which he used as a guide, removing the inferior turbinate about a quarter-inch further back than the probe. Then he chiseled the entire internal bony wall of the ostium away, and then the entire bony wall over the sac. After the bone was all removed, he took a knife and ran along the groove in the lachrymal probe. Since this operation she has not had the least trouble. Dr. Good's reason for not doing the West operation is because Yankauer has brought out the point that frequently it is the bony wall around the duct, down below, that makes pressure upon it, and that if this bony wall is removed, the natural opening is re-established.

Dr. Good also showed a specimen of a little sieve which he had removed from a patient's trachea three days previously. This sieve had been in the trachea for three weeks almost without symptoms until the last week. The peculiar thing about the case was the character of the symptoms produced. The child was ten years old. Her pulse was 150; temperature, 99.5°, and she was gasping for breath. Removal of the foreign body relieved the condition absolutely.

DISCUSSION.

Dr. Otto J. Stein asked how many applications of fulguration had been made in the first case and also something about the technic. Dr. Stein had used fulguration quite a few times, but never got any results of value. Yankauer is advising using it in a perfectly dry field and that seems logical to the speaker. It is used mainly under suspension to get the best results. Dr. Stein had used the indirect method.

Dr. C. H. Long's experience with fulguration was negative, probably owing to the brief period of application and the poor insulation, which was rubber tubing.

With regard to the Yankauer operation for dacryocystitis and how it differs from the West operation. The latter has an elaborate technic and has been successful when the Mueller sac operation failed. Reinfection and closing of the nasal openings are the principal objections to the operation of the nasal route for dacryocystitis.

Dr. Otis H. Maclay has done the West operation a couple of times. While either the West or Yankauer operation may bring about a result, it seems to him that the one that produces the least traumatism to the nose should be chosen, making a small opening rather than a long incision. The cases he had operated on apparently gave good results. They were both pus sacs.

Dr. Good, in closing the discussion, said he thought he had given seven treatments of fulguration, about ten minutes for each treatment. He was sorry he had used both the sesquichloride of iron and the fulguration, because it left him in the dark as to which did the business. The technic of fulguration is a very ordinary affair. There is a little platinum wire or any wire, with a rubber cuff over the wire, which comes within a fourth of an inch of the tip of the wire. This is fastened on to a handle. The tube is bent and put into a handle, which goes down into the larynx. The patient holds the electrode in the hand. The fulguration handle has no connection at all. In the method Dr. Good uses the electricity is drawn out of the patient and therefore it is not necessary to have the field all dry, as in the Yankauer method.

Dr. Kahn asked if any reaction was noticed following the treatment, to which Dr. Good replied that he did not notice much reaction, perhaps a little less hyperemia.

Dr. Robert Sonnenschein had seen the first patient at the County Hospital. Some of the growth was removed by Drs. Beck and Friedberg, but this was not seen by the speaker. The growth on the right cord was a broad, sessile one and the patient was aphonic. The improvement at present is very great and if fulguration contributed much to the result its action was excellent.

SPECIMEN OF CARCINOMA OF THE PHARYNX AND ESOPHAGUS, WITH SECONDARY INVOLVEMENT OF THE CERVICAL LYMPH NODES.

Dr. G. M. McBean presented this specimen, supplementary to the remarks he had made at a meeting a couple of months ago, in the discussion of Dr. Norcross' paper on carcinoma of the pharynx. The diagnosis made from post-mortem examination was: Carcinoma of the pharynx and esophagus; secondary carcinoma of the servical lymph nodes; old fibrous pleural adhesions; bilateral localized inhalation broncho-pneumonia.

THE DIAGNOSIS AND TREATMENT OF SINUS THROMBOSIS OF THE LATERAL SINUS.

Dr. J. Holinger said the diagnosis of thrombophlebitis of the lateral sinus up to a few years ago was based upon the finding of a cord-like swelling of the jugular vein, swollen eyelids and septic attacks, consisting of sudden rises of temperature and chills. The first two were very late symptoms. The septic attack is alone reliable for an *early* diagnosis. On account of the possibility of an early diagnosis, and because of the results of some experiments, the treatment has changed. It is sufficient to lay the sinus bare extensively, in order to avoid all retention of pus in the surroundings of the sinus. The sinus itself can deal with the infection within. Ligation of the jugular vein, puncture, scraping, handling of the sinus, etc., ought to be avoided, on account of possible injury to the intima of the sinus and consequent new formation of thrombi.

DISCUSSION.

Dr. Norval H. Pierce did not think such a radical view of the matter should pass undiscussed. It seemed to him to mark a distinctly retrograde step in the treatment of sinus thrombosis. It is against the general law of surgery, namely, that where you find pus you should drain. There is no doubt that a great many more sinus thromboses recover without operation than we have any idea of, but once there is a septic thrombus detected within the sinus, whether it is parietal or a floating thrombus, or whether it is an obturative thrombus, his opinion is that it should be removed, the same as a septic thrombus in a large vein in any other accessible part of the body. The method described by Dr. Holinger has been tried, but not extensively, so far as Dr. Pierce knew. It does not represent the modern idea of the subject by any means. These investigations on animals count for very little, in Dr. Pierce's opinion, as they are produced on healthy animals, and these thrombi in people, especially in the chronic forms, occur in people more or less reduced in vitality by the whole suppurative process.

Regarding the advisability of ligating the jugular in every case, that would bear a good deal of discussion. Some operators are very radical in the matter, believing all cases should be ligated before opening the lateral sinus. Dr. Pierce does not agree with these men, but believes, however, that there is a distinct indication for ligation of the jugular—not only ligation, but dissection of a given piece of the jugular between the upper and lower ligatures. In this way we can to the best of our ability cut off the original source of the infection, because a thrombus occurs primarily from an infection of the blood vessel walls themselves and the infection spreads beyond the thrombus in the vessel walls.

Dr. Pierce could not see how the condition of endothelium of the intima of the inner wall of the sinus has very much practical bearing on these cases. Whenver a sinus is infected at all, this is pretty well destroyed. Its usefulness as a protective agent against the spread of the thrombus is at least rendered inactive. That is the main point upon which Dr. Holinger bases his thesis—that in order to prevent a thrombus from forming we should not disturb by our manipulative procedures the inner wall of the sigmoid sinus.

Dr. Pierce's mode of procedure in these cases of sigmoid thrombosis is to get free bleeding from both the upper and lower portion of the sigmoid sinus if possible. If he fails in the lower portion, he does not necessarily proceed immediately, at the same operation, to ligate the jugular, unless the picture has been one of very grave pyemia before. In that case he would immediately proceed to the ligation and resection of the jugular. However, at the time of the first operation, if the leucocyte count is high and there is marked sepsis, the general condition of the patient impressing one with the fact that the patient is very ill or septic infarcts are occurring, he would immediately proceed to ligation of the jugular; but if not of this type, he might wait a day or longer. The best we can do in these cases is to establish in that sinus a non-septic thrombus by whatever means of operating we adopt.

Dr. Pierce would like to know how many cases of septic thrombosis of the sigmoid or lateral sinus Dr. Holinger has seen and treated by the method described and what his percentage of recovery is.

Dr. George W. Boot had operated on fifty-one mastoids since December 1, 1915, of which six had sinus thrombosis. Three of the sinus thrombosis cases died because of delay in operating. Two of the fatal cases had meningitis, one pyemia and endocarditis. Dr. Boot believes that septic sinus thrombosis cases should always have the jugular vein ligated to prevent any further entrance of the streptococcus (the usual cause) into the circulation. Particular care is needed in diagnosing sinus thrombosis complicating erysipelas or scarlet fever.

Dr. H. Kahn asked Dr. Holinger if he had understood him to say that the swelling of the eyelid was a symptom of late sinus thrombosis. Dr. Kahn related a case in which a neglected mastoid was operated on and the sinus accidentally wounded. In the course of a week swelling of the eyelid developed, on the side of the operation. In the course of an hour a chill occurred, which recurred the next day. The wound was reopened and the sinus found thrombosed. Bleeding was secured from both sides, the wound packed and the patient recovered. This was in direct contradiction to the statement of the essayist that swelling or edema of the eyelid and swelling of the face is a symptom of late thrombosis.

Dr. Joseph C. Beck said that he used to operate in a conservative way on these sinus cases, with not a very good result. Latterly he has been ligating, opening the sinus and packing off the torcular region and going down towards the bulb, being insistent on getting the bleeding from below, as near the jugular bulb as he possibly can. Then, if he does not get bleeding he ligates the jugular, not necessarily resecting, unless there are distinct evidences of a thrombosed vein. As a means of prevention he could see nothing better than that. Ligation is very easily done and this is a procedure which the speaker practices with excellent results.

As regards swelling of the face, we see that very frequently from the cutting of the temporal vein following ordinary mastoid operations.

Dr. Holinger, in closing the discussion, said that in acute suppurations of the middle ear the temperatures ought to be taken regularly. This is the only means of early discovering a sinus thrombosis, and by operating according to the method described a quicker and better result will be obtained in a much easier way.

FULTON COUNTY MEDICAL SOCIETY

The nineteenth annual meeting of the Fulton County Medical Society was held in the City Hall in Canton, Oct. 3, 1916, and was called to order at eleven a. m. by President Allison.

A member's transfer card to Madrid, Iowa, was granted Dr. W. H. Betts.

The following officers were elected: President, Dr. J. C. Simmons; first vice-president, Dr. W. L. Crouch; second vice-president, Dr. E. P. Coleman; secretary-treasurer, Dr. B. E. Ray; necrologist, Dr. F. N. Stoops; membership committee, Dr. Jennie Parks, E. M. Price; board of censors, Dr. Jennie Parks.

Adjourned until 1:00 o'clock p. m.

Dr. Frank Smithies of Chicago presented a clinic and paper on "Diagnosis of Gastric Disturbances."

Dr. B. E. Fillis of Chicago gave a paper on "Pyelography and Its Surgical Importance."

A paper on "Passing of the Physician of the Old School" was given by Dr. C. B. Horrell of Galesburg.

After extended discussion adjournment was taken to the Congregational Church, where a banquet was served by the ladies of the church.

After the banquet an hour or more was enjoyed by all in music and social talks by many.

Twenty-four members and four visitors were present.

D. S. Ray, Secretary.

HANCOCK COUNTY

On Monday, Oct. 2, the local physicians and their wives met the out-of-town members and guests at Hotel Cutler, Carthage, where tables had been reserved for the party.

After dinner they adjourned to the American theater, where several musical numbers were given by the Carthage College Male Quartet and two interesting readings by Miss Elizabeth Smith.

Dr. Carl Black of Jacksonville read a paper on "Some of the Newer Methods of Anesthesia," illustrating the same with stereopticon views. Dr. Oliver Clark of Keokuk spoke on "Operative Treatment of Fractures," and Dr. Lapsley of Keokuk on "The Tonsil and Its Relation to Disease." Interesting discussions followed each paper. The topic, "Anesthesia and Oxytocics in Labor," was discussed by Drs. Blender, Parr, Fuller and Williams.

Dr. Knight of Carthage and Dr. Wayland of Dallas City made application for membership. It was noted that the death of Dr. J. H. Callahan, who was for many years a faithful member of the association and at one time its president, occurred since the last meeting.

Dr. Blender, who has served both as president and secretary, will transfer his membership to Peoria county. Dr. Blender has merited the respect and hearty good will of his professional brethren and they bespeak for him success in his new field.

Twenty-two members and visitors were present.

JO DAVIESS COUNTY

The Jo Daviess County Medical Society met in regular Fall session in the Mystic Worker hall, Stockton, Ill. Meeting called to order by the president, A. T. Nadig, at 2:30 o'clock, October 12, 1916.

Twenty-five members and guests were present.

Drs. J. Rodge of Apple River and W. Frederic Smith of Galena were elected members of the society.

Dr. J. H. Schrup read a paper on "Comparison of American and European Methods," discussed by Drs. Guthrie, Best, Bench, Peck, and Boots, Schrup closing the discussion.

Dr. C. L. Best read a paper on "Analgesia in Obstetrics," discussed by Drs. Peck, D. G. Smith, Maguire, Guthrie and Downing; Dr. Best closed the discussion.

The physicians were then requested to join the ladies and with them proceed to the Masonic Temple, where a banquet and entertainment was prepared for them.

T. J. Stafford, Secretary.

MACOUPIN COUNTY

The Macoupin County Medical Society met in regular session in the Masonic reading rooms and was called to order by President F. A. Renner of Benld.

Ten members and visitors were present.

Dr. M. Herschleder of Mt. Olive, a former member of Lake County Medical Society, and Dr. G. A. Floreth of Mt. Olive were elected to membership in the society.

Dr. R. B. H. Gradwohl, of St. Louis, gave an address on the subject, "The Value of Blood Chemical Methods in Diagnosis and Treatment of Nephritis, Diabetes Mellitus and Other Diseases."

Dr. Hudson Talbot, of St. Louis, gave an address on the subject, "Diseases of the Gall Bladder."

Dr. J. P. Matthews, of Carlinville, gave an address on the subject, "Happy Results from the Use of Vaccines."

A standing vote of thanks was given to Drs. Gradwohl, Talbot and Matthews for their addresses.

Several interesting cases were reported to the Society by the members who had the cases under observation.

This was a very interesting meeting, though several physicians were absent, being called as witnesses in the Circuit court.

The meeting adjourned to meet at Staunton, November 28.

T. D. Doan, Secretary.

MADISON COUNTY

The September meeting of Madison County Medical Society was held on the first at Highland, in spite of an all-day rain. In the absence of both president and vice-president, Dr. A. F. Kaeser, of Highland, was elected president pro tempore. Eighteen members and visitors were present.

Dr. Francis M. Barnes, Jr., of St. Louis, read a paper on "Diagnosis of Common Types of Psychoses," in which the picture of various forms of mental derangements, as it presents itself to the general practitioner, was cleverly drawn. He emphasized the fact that a clear, early diagnosis should be made in every case, both in justice to the patient and the community at large.

Dr. Malcolm A. Bliss, of St. Louis, followed with an address on the "Treatment and Management of Mental Cases at Home." This address received marked atten-

tion, for we are all called upon at times to decide as to whether to keep certain cases at home for treatment. He outlined in detail what arrangements should be made for home treatment. He called attention to the nursing and feeding of such patients and advocated the continuous hot bath for quieting an excited case, rather than the use of high power drugs for that purpose. He said that patients showing homicidal or suicidal tendencies should have institutional care and protection. He concluded by saying that not all insane persons should be sent to hospitals or sanitariums, but that there were many such cases that could receive appropriate treatment in their own homes.

Mrs. M. A. Herrick, our county community nurse, was present and gave a short talk as to scope and purpose of her work and asked for the loyal support of the members of our society, in the several communities of the county.

Dr. John Gordon, of Pocahontas, and Dr. Nicholas Baumann, of Pierron, visitors from Bond county, were called upon and responded in a few appropriate remarks. Dr. Gordon began the practice of medicine in Arkansas during the Civil War and has now completed fifty years of practice in Illinois. His father was a physician and his seven brothers were all followers of Aesculapius.

A substantial lunch was served by the local profession, who did everything in their power to make our stay one of pleasure and profit.

The society arranged to pay the expenses of Mrs. M. A. Herrick as its representative at the Mississippi Valley Conference on Tuberculosis at Louisville, October 4-6.

MORGAN COUNTY

The Morgan County Medical Society met at the Passavant Hospital, Jacksonville, October 19, 1916, at 11 a. m. Luncheon was served at the hospital, after which the following program was given.

"Operative Treatment of Fractures," by Dr. Carl E. Black. Dr. Black discussed fractures in general with particular reference to operation. Seven cases were presented which showed most excellent results after operative treatment. Although not favoring operating on all fractures, Dr. Black emphasized the importance of operating where good results could not be obtained otherwise, and gave the following indications for operation:

1. Deformity that cannot be reduced.
2. Deformity which cannot be retained in position.
3. Open severe compound fractures.
4. Cases of mal-union or non-union.
5. Cases of extreme callus.
6. Cases where shortening is sure to result.

Contra-indications for operation:

1. Infections in skin where fracture is not compound.
2. General debility, nephritis, etc.
3. Lack of experience and favorable facilities, etc.

The seven cases presented were further illustrated by x-ray plates and instruments and means of holding bones in position were shown. The plate most favored was the bone plate with bone screws. The value of x-ray was particularly emphasized by Dr. Black, and also other members of the society, in discussion. Discussion opened by Dr. F. A. Norris from the operative standpoint; Dr. D. W. Reid from the non-operative standpoint, and Dr. H. A. Chapin from the x-ray standpoint. The subject was very extensively discussed by members present.

At the close of the meeting Dr. A. L. Adams brought up the subject of voting for the County Tuberculosis Sanitarium at the coming election.

Visitors present: Drs. Valentine of Tallula, Skeel of Kempsville, and Smith of Roodhouse.

THOS. G. MCLIN, Secretary.

OGLE COUNTY

The Ogle County Medical Society met in the public library at Rochelle, October 18, 1916, at 7:30 p. m. The meeting was called to order by the new president, A. H. Beebe of Stillman Valley. Ten members were present and the following visitors: Dr. Daniel Lichty, Rockford; E. S. Murphy and E. O. Edgar of Dixon, and Louis Thexton, Chicago.

The following resolution was put before the society and carried by a unanimous vote:

WHEREAS, The question of establishing a county sanitarium for the treatment of tuberculosis will come before the Ogle county voters in the coming election; be it

Resolved, That the Ogle County Medical Society expresses itself as heartily in favor of this measure and earnestly recommends it to the voters of Ogle county.

Dr. Kittler was appointed to present a floral tribute and express the sympathy of the society to Dr. Bushnell, an old and respected practitioner of Ogle county, who has been ill.

Dr. R. O. Brown of Mt. Morris and Dr. G. S. Henderson of Holcomb were elected to membership.

Dr. Louis Thexton, Park Avenue Hospital, Chicago, gave an able and instructive address on "The Relation of the General Practitioner to the Hospital and the Specialist." This address was discussed by Drs. Beebe, Beveridge, Lichty and Johnson.

Dr. Thomas McEachern of Rochelle read a paper on "Symptoms and Diagnosis of Infantile Paralysis, from a Typical Case Treated." This was a classical paper and owing to the important subject was ably discussed by Drs. Beebe, Beverigde, Henderson and Kittler.

A rising vote of thanks was given Drs. Thexton and McEeachern for their excellent papers.

The society then adjourned to meet in April, 1917.

DR. J. T. KRETSINGER, Secretary.

PIKE COUNTY.

The Pike County Medical Society met in Barry at the Public Library building, October 26, 1916. There were twenty members present, also a number of visitors, including dentists and others. Dr. O. C.

Wise of Griggsville was elected a member of the Society.

Dr. W. H. Garrison of Pearl read an interesting paper on "Tetanus," with report of three cases that made complete recovery. The treatment was sulphate of magnesia as an eliminant, early drainage, tincture of iodine locally, lobelia and gelsemium to their full effect and anti-tetanic serum. In the discussion Dr. Center advocated as little washing as possible and spoke of the value of boric acid in glycerine, making a cream like compound applied to wounds and various traumatic conditions. Dr. Goodman reported a case of tetanus from traumatism occurring twenty-three days after the injury and resulting in recovery, the only symptom now being extreme nervousness.

Dr. C. E. Beavers of Barry read a paper on "The Allen Treatment of Diabetes," which evoked much interest and discussion.

Dr. Center read a paper on "Infantile Paralysis," which summed up thoroughly our present day knowledge of this disease; this paper receiving also much attention and comment from those having had cases of this malady.

Altogether this gathering of the Society was one of its very successful ones, at least one-half of its registered membership being present.

W. E. SHASTID, Secretary.

WINNEBAGO COUNTY

The Winnebago County Medical Society met at Nelson Hotel, Rockford, October 10, 1916, at 8:30 p. m., with Dr. C. A. Walker in the chair. There were 24 members and 2 visitors present.

Dr. F. C. Brooks was voted in as a member of the society.

Dr. W. W. Hume, recently located in Rockford, gave a talk on "Mastoiditis." He discussed the etiology of this disease and the importance of early diagnosis and proper treatment of other ear conditions—in its prevention. He also described the removal of tonsils by the Sluder method, and illustrated two cases.

Miss Bertha Logan, superintendent of the local Tuberculosis Sanitiarium, gave a report of the annual Mississippi Valley conference of tuberculosis workers.

Dr. W. E. Park gave a brief report of the Tri-State meetings held at Freeport, September 26 and 27.

Dr. Kinley, of the milk commission committee, made a favorable report of his investigations of Kuharskis' Dairy Farm.

It was moved and seconded that the chair appoint a committee of three members to investigate and plan out what might be done toward the dispensation of fresh and pure milk within the city of Rockford. The chair appointed Drs. Park, Gill and Kinley.

Owing to the late deaths of Drs. W. R. Franklin and F. K. Hill, the chair appointed a committee, composed of Drs. Shultz, Tuite and Allaben, to draw up resolutions of condolence to the bereaved, to be read and acted upon at the next meeting.

C. M. RANSEEN, Secretary.

Personals

Dr. H. L. Corbus has been appointed health officer of Kankakee.

Dr. Nathan Cohen, Chicago, was stabbed by a man who jumped on the running board of his auto.

Dr. J. C. Krafft, 25 E. Washington street, Chicago, announces that he limits his practice to diseases of children.

Dr. Theodore Tieken announces that he has discontinued general practice and will specialize in internal medicine.

Dr. Joseph W. Beaudette, Chicago, is a tough proposition for holdup men. He beat three of them with his fists (or feet).

Dr. Alvin B. Cary, Donnellson was operated on for disease of the kidney in the Jewish Hospital, St. Louis, October 14.

Dr. Raymond L. Hatfield, Danville, suffered a severe shock from a Roentgen-ray machine at St. Elizabeth's Hospital, Danville, October 16.

Dr. Meyer Solomon, of Chicago, has returned to his home after a prolonged absence since the first of the year and has resumed his practice.

Dr. Franklin H. Martin, Chicago, has been appointed a member of the advisory commission to be associated with the council of national defense.

Dr. Dwight C. Orcutt, Chicago, has been appointed chief surgeon in the ophthalmic department of the Illinois Charitable Eye and Ear Infirmary.

Dr. Gilbert M. Loewe, Chicago, who has been working under the German Red Cross at Naumburg, Germany, for eight months past, has returned home.

Dr. Julius H. Hess has been appointed professor of pediatrics and head of the division of pediatrics in the University of Illinois, College of Medicine.

Dr. Dwight C. Orcutt has been appointed ophthalmic surgeon at the Illinois Charitable Eye and Ear Infirmary, succeeding Dr. Oscar Dodd, resigned.

Dr. D. N. Eisendrath, Chicago, held the annual surgical clinic of the Montgomery County Medical Society, at St. Francis Hospital, Litchfield, October 24.

Dr. Harry C. Rolnick has reached Berlin on his way from the Graudenz Hospital to his new

post of duty at the psychopathic hospital in Pardubitz, Bohemia.

Drs. N. La Doit Johnson and Margaret R. Otis and a druggist, George E. Hochhaus, of Chicago, were arrested for selling excessive amounts of heroin to an habitue.

Dr. James W. Pettit, Ottawa, was elected president of the Mississippi Valley Sanatorium Association at the meeting of the Mississippi Valley Conference on Tuberculosis, October 7.

Dr. Charles H. Starkel, Belleville, chief surgeon of the Southern Railway Company, entertained the members of the staff of the railway at a dinner at the St. Clair Country Club October 3.

Prof. Roy G. Hoskins, formerly associate professor of physiology of Northwestern University Medical School, has been appointed professor and head of the department of physiology in that school.

Drs. Christian B. Luginbuhl and Franz H. Harms have been appointed by the state department to work under the direction of the American ambassador at Berlin for the relief of British prisoners of war in Germany.

The resignation of Dr. Arthur R. Edwards as dean of Northwestern University Medical School was accepted by the trustees of Northwestern University, October 17. Arthur I. Kendall, professor of bacteriology, was made acting dean.

At the semi-annual meeting of the Association of Railway Chief Surgeons, October 16, Dr. J. O. Cobb, of the U. S. Public Health Service, spoke on "The Activity of the United States Public Health Service Pertaining to Water Supply of Interstate Common Carriers."

Dr. Albert H. Roler, Evanston, has been appointed, by the secretary of state, assistant at the American embassy in Berlin, his duties being to inquire into and report on the condition of British prisoners in Germany and German prisoners in Russia. Dr. Roler sailed for Berlin, October 12, via Denmark.

Dr. H. C. Merker, well known to the Chicago physicians, who for years represented the Arlington Chemical Company, is now introducing to the Chicago profession the products of the biological laboratories (Bacterins) of Swan-Myers Co. of Indianapolis. Our readers will note that Swan-Myers Co. are advertising in the Journal.

Lt. W. F. von Zelinski, Chicago, has been relieved from active duty in the Medical Reserve Corps and has resumed practice. The doctor served at Jefferson Barracks, Mo., Ft. Sam Houston, Texas., and at the Base Hospital, Nogales, Arizona. The return home was made by way of the Pacific coast with stops at points of interest. The doctor reports his service as most interesting and highly instructive.

News Notes

—The Municipal Tuberculosis Sanatorium at Rock Island was opened October 19 with a reception.

—Dr. L. Duncan Bulkley began his eighteenth series of free clinical lectures on diseases of the skin at the New York Skin and Cancer Hospital November 1.

—The Chicago city council, October 9, passed an ordinance appropriating to the health department $17,000 to continue its work against anterior poliomyelitis.

—The forty-second annual meeting of the Southern Illinois Medical Association was held at Benton, November 2 and 3, under the presidency of Andrew J. Butner, Harrisburg.

—The Mary Thompson Hospital Auxiliary has been formed with Mrs. George Patrick, Wheaton, president, and Dr. Goldye Hoffman as a vice-president, to perpetuate the work of the founder of the hospital, the late Dr. Mary Thompson.

—The press account of a brilliant operation for ankylosis of the jaw performed before the recent meeting of the Clinical Congress of Surgeons of North America ends with the statement: "Mr. Gaffney died tonight." Do you suspect that he was the patient?

—At the opening exercises of the College of Medicine of the University of Illinois, held in Chicago, October 5, Edmund Janes James, president of the university, delivered an address on the "Functions of the State in the Promotion of Medical Education and Research."

—It is said that 385 fewer babies died during the recent epidemic of infantile paralysis in New York City than during the same weeks of the summer of 1915, owing to the greater care mothers gave their children during the epidemic. A bad scare is a great aid sometimes.

—A series of lectures on the care of children is

to be given at the Children's Memorial Hospital, Chicago, on Wednesdays at 11 a. m. The lecturers include Drs. Henry F. Helmholz, Samuel J. Walker, Frank S. Churchill, Coleman G. Buford, Edwin W. Ryerson and Miss Elsie Burks, New York.

—The twenty-second meeting of the Robert Koch Society for the study of tuberculosis was held October 26 at the Hotel Morrison. Dr. Harry J. Corper spoke on "Some Interesting Laboratory Problems in Tuberculosis," and Dr. Walter A. Gekler discussed the "Clinical Applications of These Problems."

—Orders were issued September 17 by the United States Public Health Service that the passenger steamers on the Great Lakes shall either install water purifying plants or take water on board at port of call. Of the twenty-two passenger steamships entering the port of Chicago, eleven have already complied with the requests, previously made, by the installation of violet ray plants.

Marriages

HARRY LEVI DAY, M. D., to Miss Nola Marks, both of Bluffs, Ill., October 25.

GIOCHINO LAVIERI, M. D., to Miss Edna C. Gibbs, both of Chicago, September 30.

THOMAS JOHN SULLIVAN, JR., M. D., to Miss Gertrude Scotten, both of Chicago, October 4.

ANTHONY MATHIAS DRUMMY, M. D., Lincoln, Ill., to Miss Nora Ryan of Paxton, Ill., October 4.

ROSCOE CONKLING EATON, M. D., to Miss Edna E. Moody, both of Chicago, September 28.

JAY CLAUDE SIMMONS, M. D., Norris, Ill., to Miss Rachel Cattron of Fairview, Ill., September 27.

ARTHUR FREDERICK SCHUETTLER, M. D., to Miss Matilda Genseka, both of Chicago, October 18.

ARTHUR LEE HAGLER, M. D., to Miss Ottie Morgan Maxey, both of Springfield, Ill., at St. Louis, September 9.

JOHN WESTON EMMONS, M. D., Poplar Grove, Ill., to Mrs. Emma Downy of Aurora, Ill., at Rockford, Ill., September 28.

DANA WINSLOW ATCHLEY, M. D., New York, to Miss Mary C. Phister of Chicago and Newbury, Mass., at Newburyport, Mass., September 22.

Deaths

JENNIE D. KETCHUM, M. D., Godfrey, Ill.; Hahnemann Medical College, Chicago; died at her home, September 23; aged 50.

ERASTUS P. HILLIGOSS, M. D., Decatur, Ill.; Missouri Medical College, 1878; St. Louis, Mo.; aged 64; died at his home October 23.

JOACHIM B. WEINTRAUB, M. D., Chicago; University of Vermont, Burlington, 1893; aged 46; who was shot by a patient in his office, October 9, died the next day in St. Luke's Hospital from his injuries.

JOHN WILLIAM WAS, M. D., Chicago; University of Michigan, Ann Arbor, 1878; aged 61; formerly a member of the Illinois State Medical Society; died at his home, September 23, from carcinoma of the intestine.

DAVID PAULSON, M. D., Hinsdale, Ill.; Bellevue Hospital Medical College, 1894; aged 48; a Fellow of the American Medical Association; founder and superintendent of the Hinsdale Sanitarium; died in Ashevillege, N. C., October 16.

JOHN W. HOSIER, M. D., Spring Valley, Ill.; Medical College of Ohio, Cincinnati, 1873; aged 69; for forty years a practitioner and druggist of Bureau County, Ill.; died in St. Margaret's Hospital, Spring Valley, October 2, from diabetes.

CHESTER H. LATHAM, M. D., Pecatonica, Ill.; Northwestern University Medical School, Chicago, 1876; aged 64; a member of the Illinois State Medical Society; died at the home of his daughter, in Seward, Neb., October 11, from anemia.

ROBERT A. FITZGERALD, M. D., Alton, Ill., formerly of Cairo, Ill.; St. Louis College of Physicians and Surgeons, 1904; aged 42; a member of the Illinois State Medical Society; died in the Missouri Baptist Sanitarium, St. Louis, October 10, from pneumonia.

FRANK KNIGHT HILL, M. D., Rockford, Ill.; New York Homeopathic Medical College, New York, 1875; aged 65; formerly a member of the Illinois State Medical Society; surgeon to St. Anthony Hospital, Rockford; died at his home, October 8, from heart disease.

JAMES H. CALLAHAN, M. D., Carthage, Ill.; Bellevue Hospital Medical College, 1870; aged 72; formerly a member of the Illinois State Medical Society, and president in 1913 of the Hancock County Medical Society; died at the home of his daughter in Cedar Rapids, Iowa, September 22.

MILTON BENNETT TITUS, M. D., Chicago; New York University, New York, 1881; aged 58; formerly a member of the Illinois State Medical Society and once president of the Allegany County (N. Y.) Medical Society; died in St. Luke's Hospital, Chicago, October 14, from the effects of poison, believed to have been self-administered, with suicidal intent.

ELIJAH ILES KERLIN, M. D., Chicago; University of Pennsylvania, Philadelphia, 1886; aged 62; a Fellow of the American Medical Association and for many years a member of the staff of St. Joseph's Hospital and the Lincoln Park Sanitarium for Sick Babies; who had suffered several years from bronchial asthma; died at his home, October 11, from acute dilation of the heart.

JOSIAH L. WILCOX, M. D., Springfield, Ill.; Washington University Medical School, St. Louis, 1860; Illinois Army Board, 1863; aged 80; surgeon of the Eleventh Illinois Infantry, U. S.V., throughout the Civil War; a member of the legislature in 1874 and collector of internal revenue in the central Illinois district; for several years city physician of Springfield; died at the home of his daughter in Smithfield, Ky., October 4.

Book Notices

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. With especial Reference to the Application of Remedial Measures, of Disease and their Employment upon a Rational Basis. By Hobart Amory Hare, B. Sc., M. D., Professor of Therapeutics, Materia Medica and Diagnosis in the Jefferson Medical College, Philadelphia; Physician to the Jefferson Medical College Hospital; one-time Clinical Professor of Diseases of Children in the University of Pennsylvania. Sixteenth edition, revised and enlarged. Imperial octavo, 1009 pages, with 149 engravings and 17 plates. Cloth, $4.75, net. Lea & Febiger, Publishers, Philadelphia and New York, 1916.

It would be interesting to know how many medical books written in 1916, A. D., will live to the 16th edition. We predict not one.

Hare's Practical Therpeutics needs no recommendation to medical practitioners. It is necessary only to note the issuing of a new edition. It is also interesting to note the third Chinese edition of this work. This edition retains the same general plan as its predecessors, thoroughly revised and brought down to date.

In the present edition the official preparations of the new U. S. Pharmacopœia and the new British Pharmacopœia have been introduced; and every article has been revised in an attempt to bring the text into complete conformity with the views generally accepted.

We predict for this edition the same success and popularity held by former editions.

THE CONTROL OF HUNGER IN HEALTH AND DISEASE. By Anton Julius Carlson. Price, $2.00, net. The University of Chicago Press. Chicago.

At no other time in the history of medicine have so many ailments been assigned to errors of diet, particularly to "overeating." This applies especially to the decrease in longevity of adult life.

The author of this book has seen the need of further study of the physiology of the stomach by physicians. This book is highly scientific, and covers the subjects of appetite, hunger and digestion in a very thorough manner, the author directing his energy particularly to the physiology of hunger. He tells much of what hunger is, and why and somewhat of how to control hunger experimentally. We are afraid, however, that people practically will continue to exhibit hunger in spite of attempted control.

However, the book is valuable as it is. We all should be better physiologists, and this book will stimulate further work along this line.

ORAL ANAESTHESIA. Local Anaesthesia in the Oral Cavity. Technique and Practical Application in the Different Branches of Dentistry. By Kurt Hermann Thoma, D. M. D., Assistant in Anaesthesia, Harvard Dental School, Harvard University; Assistant in Dental Anatomy, Harvard Medical School, Harvard University; Fellow of the Harriet N. Lowell Society for Dental Research of Harvard University. Member of National, State and Local Dental Societies. Price $3.00 net. Ritter & Flebbe, 120 Boylston Street, Boston.

This work is, of course, intended for the practicing dentist and should be in the hands of every dentist. Much of the pain suffered in the dentists' chairs may be avoided or at least partially alleviated, and the author tells you how this may be done. He takes up in a concise manner the anatomy of the mouth, particularly the bone and nervous anatomy, and demonstrates how local anaesthesia may be best obtained. A number of drawings and radiographs illustrate the text, and make exactly clear the author's meanings.

ORAL ABSCESSES. By Kurt H. Thoma, D. M. D., Lecturer on oral histology and pathology and member of the Research Department of Harvard University Dental School; Instructor in Dental Anatomy, Harvard Medical School; Oral Surgeon to the Robert B. Brigham Hospital; Visiting Dental Surgeon to the Long Island Hospital; Consulting Oral Surgeon to the Boston Dispensary. Price $4.50 net. Ritter & Co., Boston. 1916.

The author in his introduction says, "This volume has been written with a view to establishing a correct relationship between the condition of the oral cavity and the health of the patient, and also in the hope that a clear presentation may lead to a more general understanding of this new field."

The book, of course, is of more interest to the practicing dentist and the student, but the general practitioner will also have use for it. With the present day teaching the physician is looking more to the teeth as local foci of infection.

There is a considerable amount of elementary information contained in the book for which the physician will not care, but there is also a large amount of information on infections springing from defective teeth, which is of great importance.

One of the chief values of the book to the physician lies in an excellent lot of radiographs and colored microphotographs and other colored plates which frequently reveal more to a student than does a text.